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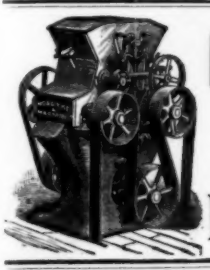
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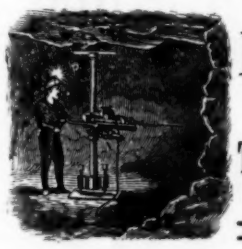


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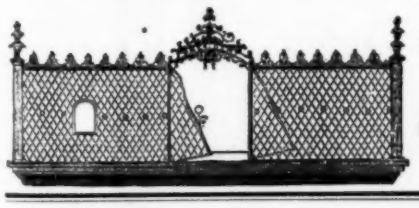
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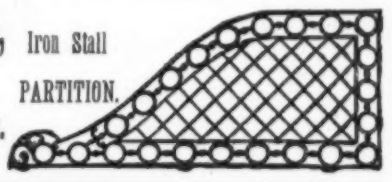
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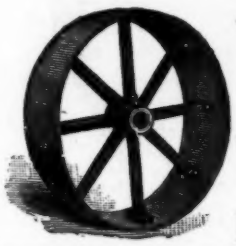


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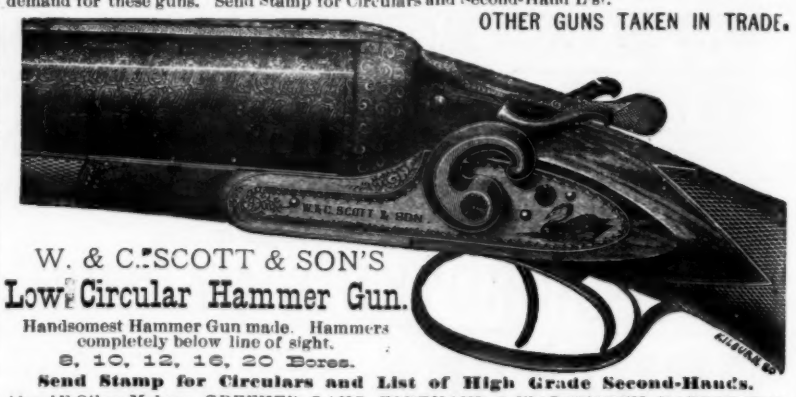


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The wear and tear of the Mill is much less than any other Quartz Mill doing the same amount of work, and the quality of the work done by it is greatly superior to work done in any other Quartz Mill now in use.

It crushes to a uniform fineness and makes no slimes, so that no sizing is required for concentration.

The Mill is equally well adapted to crushing and pulverizing of all classes of ores, either for amalgamation or concentration, and will pulverize and amalgamate from one-half to one ton per hour, according to character of ore and fineness of screens.

With ordinary care there is no loss of mercury by flouring, and consequent loss of gold, as in most other Mills where mercury is used in the Mill.

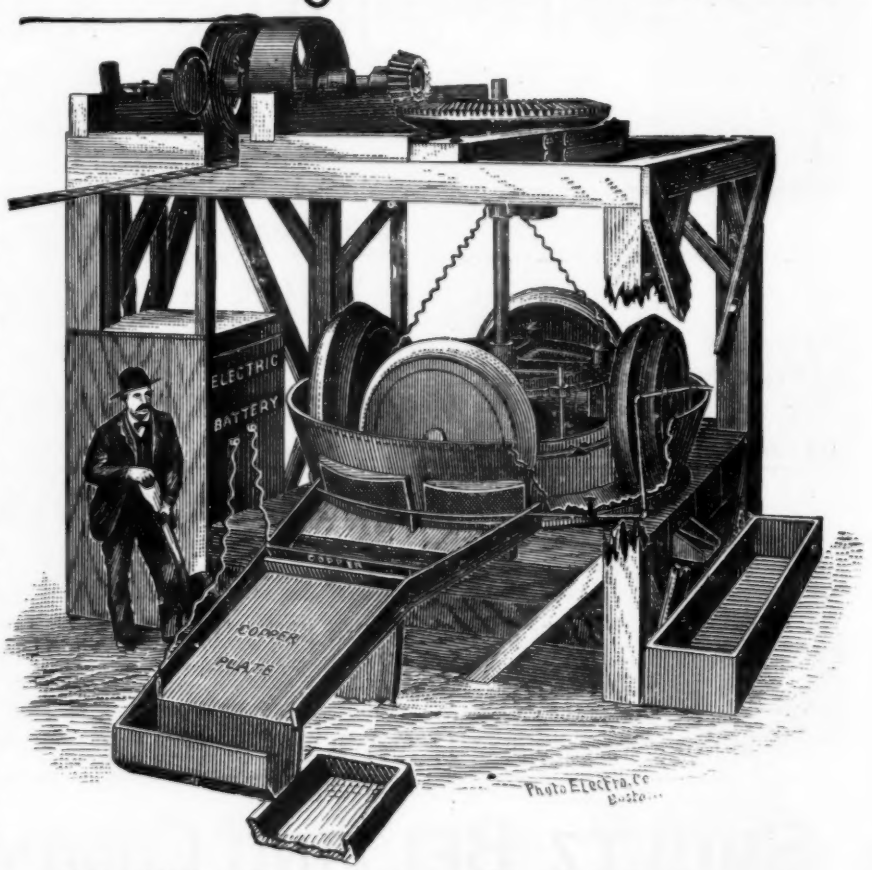
Amalgamation is carried on in the same operation with the crushing. The mercury is placed in the Mill in quantities varying from 10 to 40 pounds.

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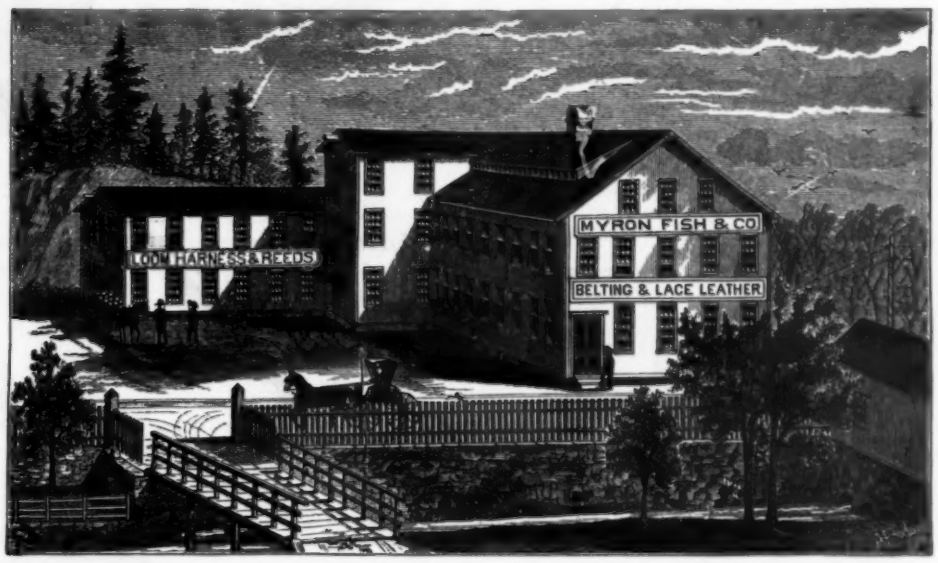
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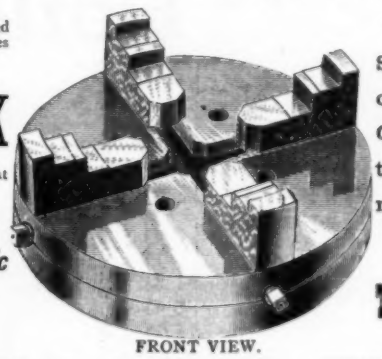
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This Chuck is constructed upon the same general principles as the well-known

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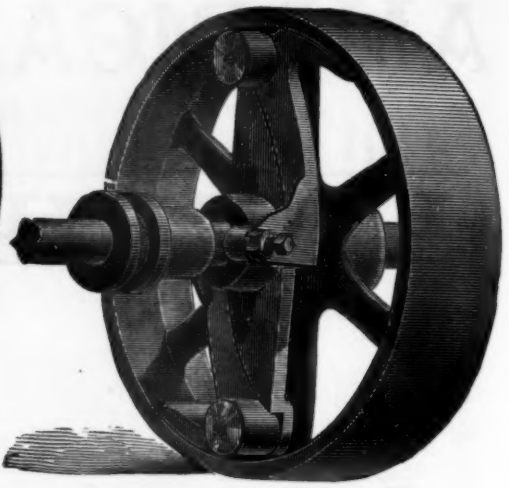
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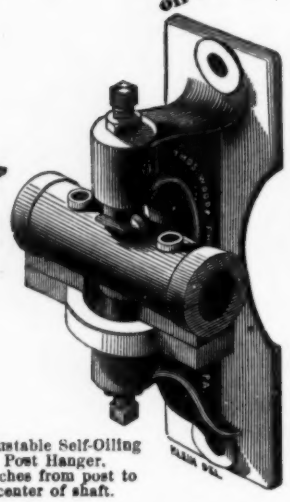
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Special Driving,
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PULLEYS from 4 inches to 10 feet in diameter.



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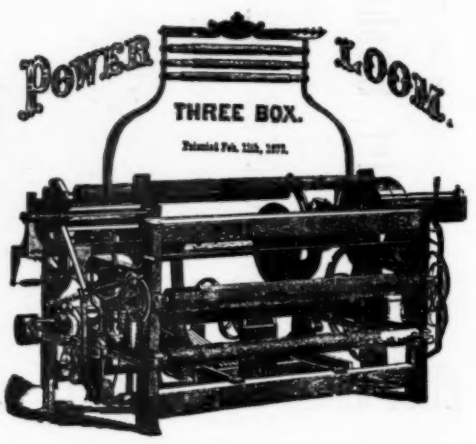


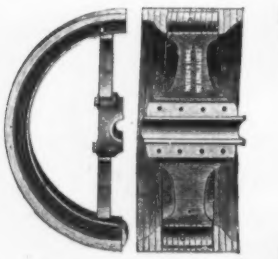
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STEAM ENGINES, BOILERS,

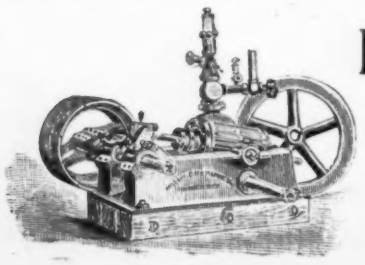
(Made by the Tweedle system of hydraulic riveting),

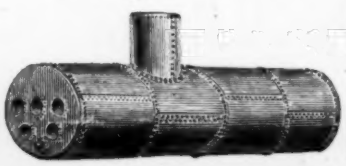
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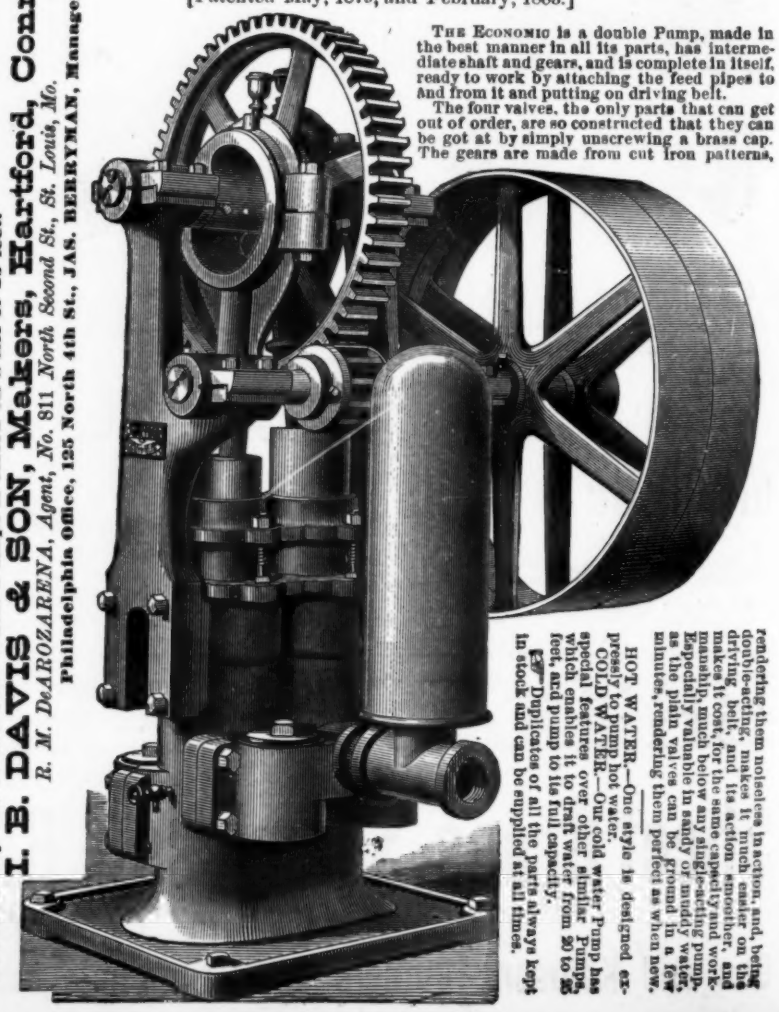




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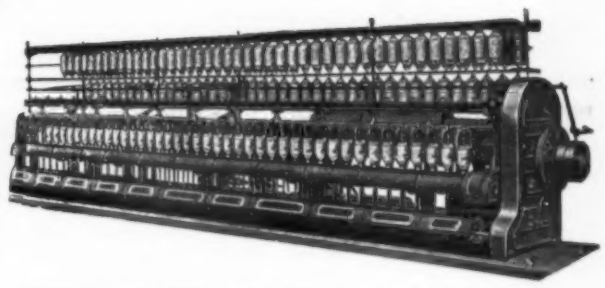
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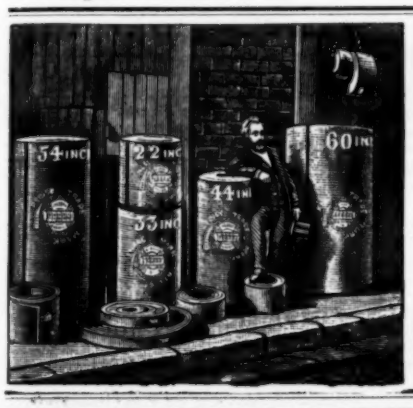
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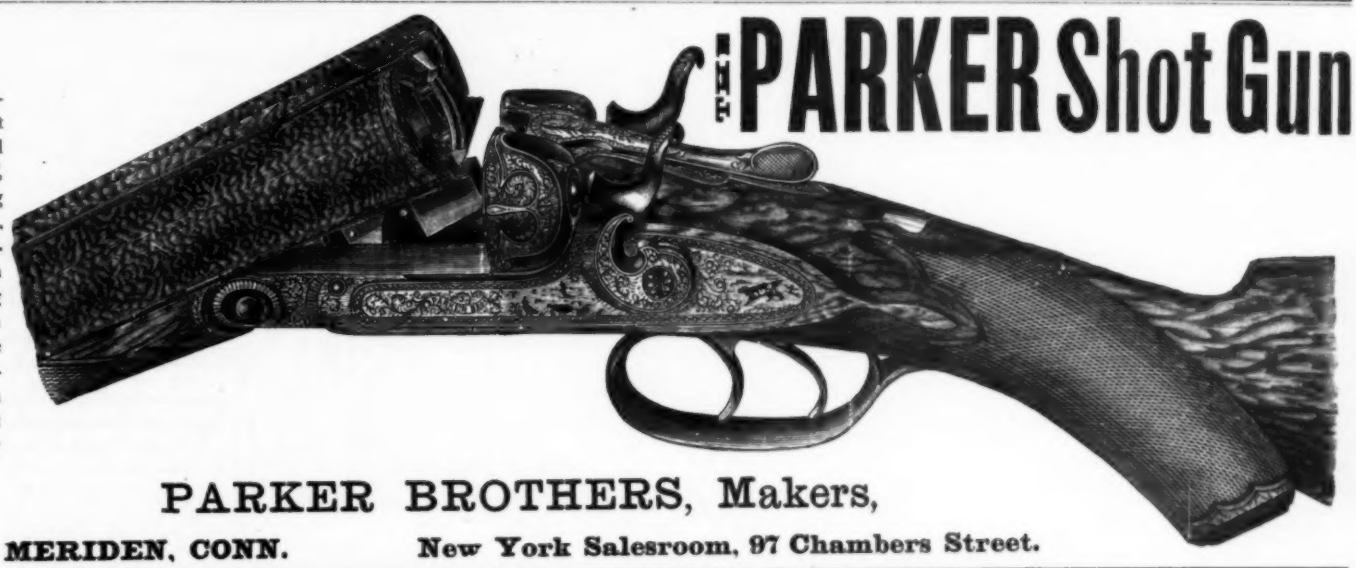
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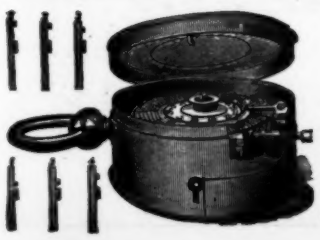


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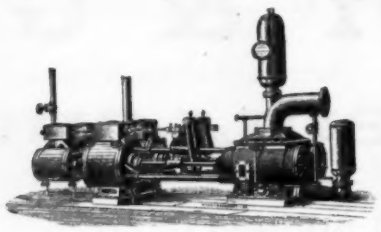
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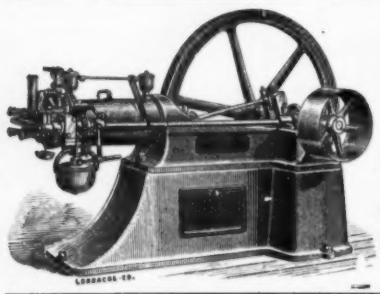
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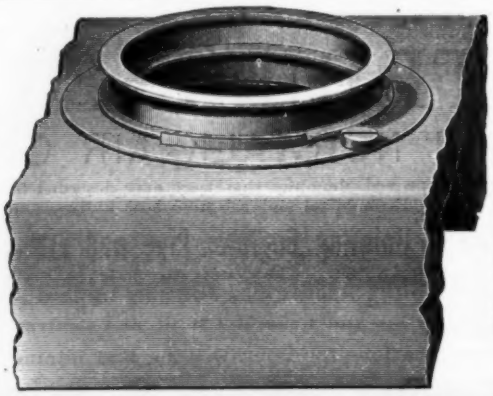
Spinning Rings.

GEORGE DRAPER & SONS,

HOPEDALE, MASS.

TELEGRAPH ADDRESS AND RAILROAD STATION,

MILFORD, MASS.



	Number of Rings sold.	Number of Rings sold for repairs.
1869	6,025	
1870	20,258	
1871	38,648	
1872	94,264	12
1873	117,301	
1874	168,382	500
1875	223,924	963
1876	185,319	947
1877	270,811	946
1878	215,214	3,309
1879	336,918	8,007
1880	567,860	11,264
1881	659,730	8,974
1882	636,715	22,515
1883	416,500	21,689
1884	319,869	25,105
1885, 9 mos.	212,056	22,373
Total number sold	4,489,794	126,604

Total number in use 4,363,190.

The great durability of our Rings is shown by the fact that we have more rings in use over twelve years old than all we have sold for repairs.

This statement shows unmistakably that a mill once supplied with our rings need think but little of the cost of repairs. As the number sold for repairs is an average of about twenty per cent. of the number sold the tenth year before, the average life of our rings will be at least twelve years.

Do not make the mistake of ordering new frames without specifying Double and Adjustable Rings. While they cost more to begin with, they are much the cheapest in the end, on account of their **uniform excellent quality** and **unparalleled durability**.

As an encouragement to use none but the best of Rings, we **reduced the price** on and after the first day of January, 1885, of those 1⅝ inches or less in diameter, without holders and screws, to be used only to take the place of our rings worn out, to 12 cents each.



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Will supply estimates for laying double or single Railway Tunnels, Water Mains or Tubes across any bay or channel. Correspondence solicited.

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BALTIMORE

Manufacturers' Record.

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BALTIMORE, JANUARY 16, 1886.

A Protective Tariff Convention.

In view of the threatened tariff legislation and the determination of the free traders to do all in their power to cripple the industrial interests of the country—and more especially those of the South, that being younger and weaker, are more in need of the aid of protection than their Northern competitors—it behoves every one interested in the welfare of the South, who believes that the South can only become prosperous through the help of a protective tariff, to be earnestly at work. There are thousands and tens of thousands of people throughout the South who appreciate the vast importance to this section of protection, but while they are doing nothing to impress their views upon the public, the free traders and the "tariff for revenue only" men are vigorously fighting for free trade. Our Birmingham correspondent has lately suggested the advisability of a convention of Southern protectionists that they might, through united action, impress upon Southern congressman the extent and importance of the protective sentiment of the South. We believe that this is a good suggestion. Let such a convention be held and we feel sure that it would be of decided benefit. It would unite all who favor protection regardless of party lines—and party lines may well be laid aside in view of the importance of this great question—and its influence would certainly be for the good of the whole South. What Southern city will take the lead in calling such a convention?

Need of a Home Market for Farmers.

The MANUFACTURERS' RECORD has labored long and earnestly to impress upon the South:

1. That the South, as a whole, can never be prosperous until its farmers are prosperous.

2. That Southern farmers, as a class, will never be prosperous until they have a home market for all the diversified products of a farm.

3. That this home market can only be secured by the development of extensive manufacturing and mining interests throughout the South, and that it is impossible to do this without a protective tariff.

The first proposition admits of no discussion. It is a self-evident fact. There is hardly more room for discussion of the second. The Southern farmer is advised day after day, and year after year to diversify his products—to raise less cotton and more of other produce. To a certain extent, this advice is very good. There are, of course, many farmers who would improve their condition by raising their own foodstuffs, but even a change in that direction would not lift up and improve the whole farming interests of the South. To make prosperous the agricultural interests of that section, as well as of any other, there must be even a wider diversity of productions than cotton, corn and hogs. These are the staples, but it is hardly so much the staple products that bring prosperity as it is the diversified products of a farm. The Southern farmer must have a home market for his poultry, eggs, butter, milk, fruits, vegetables, &c. In the production of these he would find great profit if there were a good home market for them. At present he has little or no market for these very important articles. It is true that here and there some demand is found for them, and in the neighborhood of the larger Southern cities and manufacturing centers there is a growing demand for all such productions; but how small is this demand as compared with the almost limitless capabilities of the South in the production of such things! Almost nine out of ten Southern farmers would simply be wasting time and energy to raise fruits, vegetables and poultry in the hope of finding a profitable home market, and so they must of necessity, willingly or unwillingly, continue to raise cotton, as that is a crop that can always be turned into money. A home market can only be secured through the development of manufactures and mining, which would furnish employment to consumers of agricultural products—the South having already far too many producers of such products as compared with the total population. What a revolution would be seen if every Southern farmer could readily sell, at remunerative prices, every crate of fruits or vegetables he could produce, every pound of butter he could make, and all the poultry he could raise! Instead of poverty would be seen riches, and the South would become as it ought to be—the garden spot of the world. It is this ability to sell everything that they can raise that has made Northern farmers rich. Travel through Pennsylvania and you see on every side evidence of great agricultural prosperity. The land is naturally no better than that of the South; the climate does not begin to compare with that of the genial Sunny South, and the farmers are only more enterprising because they have more inducements to be so. Give the Southern farmers the same opportunities possessed by Pennsylvania farmers, in having a good home market, and they, too, would display the same energy and enterprise. The last census tells us that the value of Pennsylvania's manufactures was greater than the combined value of the manufactures of the whole South, or in other words, every manufacturing enterprise located in the fourteen Southern States in 1880, if crowded into one State as large as Pennsylvania, would not make that State near as much of a manufacturing area as Pennsylvania was at that time. It is this enormous concentration of industrial interests that enables Pennsylvania farmers to grow rich.

Pennsylvania's vast manufacturing interests have been built up through the aid of a protective tariff. Without such help they could never have reached such enormous proportions. It is only by the aid of the same protection that the South can become a great manufacturing center. It is impossible to develop the industrial interests of the South without a protective tariff, and without the development of these interests the farmers of the South, as a class, must of necessity continue poor, despite their glorious climate, their excellent land, and all their other advantages. Is it not time for the South to see the importance of maintaining the protective tariff?

A Sad Story.

The New York Times lately contained a letter from its London correspondent, from which the following paragraph is taken:

"The suffering among the poor of London, which is always great, is now said to be unprecedented, and the usual efforts at a Christmas alleviation seem to have been paralyzed by the immensity of the task, for comparatively little organized charity has been reported. Any day during the past fortnight one could see thousands of faint and ragged wretches prowling outside the wharves, each ready to fight the other in order to be one of a score who were admitted to a day's work for 40 cents if a ship happened to come in. Everywhere business is reported to be worse than it was a year ago. It is said that not a single Christmas publication has yielded a profit. At the London docks less than one-half the quantity of wine has been taken out of bond that was taken out last year. More tangible luxuries suffer in the same way. When it was stated a year ago that British shipbuilding industries were off half a million tons, it seemed that the worst showing had passed; but the report now is likely to show another diminution, and one nearly as great. This is a sample of all industries, while the farmers' prices have reached a starvation point."

Surely there must be some mistake here, or else our free trade friends have failed to hear of this terrible condition of affairs in England. They are constantly pointing to Great Britain as an illustration of the benefits of free trade. Are they ignorant of the extreme business depression in that country, or do they imagine that others are? We repeat the question we have so often asked, if protection is responsible for the late dullness in this country, now fortunately passing away before the incoming of better times, what is it that is responsible for the terrible depression in all industrial interests of Great Britain? If under free trade Great Britain finds her people growing poorer year by year, the number of unemployed laborers steadily increasing, and almost every branch of manufacturing largely overdone, forcing hundreds of factories, workshops and ship yards to be closed, why should the United States be urged to follow her lead, and adopt free trade? Certainly, even during the worst of the late dull times, there have been no such scenes of misery in this country as those pictured by the Times correspondent.

Railroad Building in 1885.

The statistics of railroad building in 1885 show that while there was less activity in this direction than in any year since 1878, the South added nearly 1,100 miles of new road to her mileage, or largely more than one-third of the total mileage constructed last year. The aggregate of new tracks laid in 1885, according to the annual report of the Railway Age, in the whole country was 3,113 miles, Missouri leading with 282 miles, followed by Kansas with 276, and then by Florida with 251. The number of lines under construction in 1885, and the track laid during that year in each of the Southern States was:

Maryland	1	63.0
Virginia	3	11.0
North Carolina	3	31.0
South Carolina	4	104.0
Georgia	9	151.3
Florida	11	251.5
Alabama	3	27.0
Mississippi	3	76.6
Louisiana	2	45.2
Tennessee	1	2.0
Kentucky	5	53.0
West Virginia	2	21.0
Texas	6	211.2
Arkansas	4	26.5
Total	59	1,096.3

The four States, South Carolina, Georgia, Florida and Texas, had very nearly two-thirds of the total track laid in the South last year, or 718 miles. The lowest State in the list is Tennessee, which added only two miles of new track.

The outlook for 1886 promises more activity in railroad construction than we have had for several years. Already a large number of branch roads and extensions are under construction. In Texas the activity in

building new roads bids fair to be unusally brisk, even for that great State. In North Carolina a number of roads, some of them quite important ones, are now being built, and the prospects in that State, as well as in South Carolina, are favorable for a considerable extension of railroad mileage during 1886.

NOTES.

How vastly different is the condition of business at the opening of 1886 from what it was at the beginning of 1885! Then hundreds of big manufacturing enterprises were closed, wages were everywhere being reduced, and about the best that could be said was that the worst had probably been passed. Now we rarely hear of any manufacturing enterprise being shut down, even to make the annual clearing up and for stock-taking. Works that have been closed for long periods are starting up; those in operation are crowded with orders. Instead of wages being reduced, we read with pleasure of wages being advanced, and everybody appears cheerful and confident of a year of great prosperity in all industrial matters despite the the silver and tariff questions. What a contrast as compared with January, 1885!

* * * *

The Cleveland Iron Trade Review has been asking the manufacturers, What of the business prospects for 1886? and the summary of their replies, covering the past year, and the outlook for the future, is as follows:

In wood-working machinery business has been large in volume, but prices have been too low to be satisfactory. Machine tool works have had a comparatively dull year, with unremunerative prices. Manufacturers of special patented tools note no diminution in either volume or prices during the year, some of them on the contrary reporting a decided increase. In freight and passenger elevators there has been an active demand throughout the entire year, some works running over-time. Manufacturers of iron roofing enjoyed a good trade. Bolt and nut machinery has had a ready sale. Mill machinery was in about the same demand as in 1884. Blast furnace and mining machinery has suffered from dullnes, but not as much as might be expected. Hardware works have been generally well employed. All branches of the iron and machinery trades note a decided increase in both orders and inquiries within the past sixty days, and the prediction is made, without exception, that 1886 will be a year of widespread prosperity.

* * * *

Commenting on the efforts of Baltimore and Philadelphia to increase their Southern trade, the Savannah News very justly says: "What these cities ought to do is to help the South Atlantic States to secure the necessary appropriations for the improvement of their harbors, and then establish steamship lines to Southern ports. The trade of the South is small now as compared to what it will be ten years hence. The mines of the South, particularly the iron mines, are just beginning to be developed. The development of the South's mineral and agricultural wealth, to say nothing of the increase in her manufactures, is certain to more than double her trade with the North in a very few years."

* * * *

Liberal appropriations ought to be made to improve the South Atlantic and gulf ports, and Baltimore should be an earnest supporter of every effort made in that direction. In truth, Baltimore would be wise if she vigorously championed everything calculated to develop and enrich the South. Baltimore ought to be the great center of Southern trade, and her merchants, manufacturers and capitalists ought to be the foremost workers in the present development of the vast resources of that section. But, unfortunately, they fall far short of their opportunities. With one of the richest prizes for which a city ever contended almost within their grasp, they make little or no effort to secure it. The South is daily growing richer; in ten or twenty years its trade and manufactures will be enormous, but Baltimore is quietly permitting other cities to gradually gain control of this ever-increasing trade. Baltimore has failed to identify herself with the progress of the South as she might have done, and naturally Southern people are beginning to look more and more to Philadelphia, to New York, Boston and other cities, where deeper interest is shown in every project calculated to develop the South.

* * * *

The Northwestern Miller makes the suggestion that "every State in this Union is rich enough to support directly and wholly its convicts. Every State needs better roads, and should keep them in repair after they are made. Every convict in the land, who is made to labor, should put in his time on the public highway, and the sooner this policy is adopted, the better it will be, not only for individual States, but for the whole country. The practice of private employment of convict labor must go."

Better roads are certainly badly needed, especially in the South. One of the most serious drawbacks to country life in the South is the terrible condition of the roads during the winter. In some sections good roads are more needed than new railroads. The employment of convicts in making good roads, while not yielding a direct revenue for their support as when hired out, would in the end doubtless be of far greater profit to the State, as good roads would be of almost incalculable benefit. They would benefit every interest, increase the value of land, attract immigration, and largely add to profits of the farmers.

The Etiwan Phosphate Co., one of the oldest phosphate companies of Charleston, S. C., has passed under the control of the Walton & Whann Fertilizer Co., of Wilmington, Del., which has purchased at par a majority of the stock of the Etiwan. It seems that the Wilmington company had determined to locate phosphate works in the South, and, after looking around a while, they concluded that it would be better to purchase works already established, than to build new works, and hence they purchased a controlling interest in the Etiwan, costing them, according to report, $156,000.

Birmingham Notes—Pottery Works in the South—The South and the Tariff.

[Special correspondence BALTIMORE MANUFACTURERS' RECORD.]

BIRMINGHAM, ALA., Jan. 11, 1886.

The post-holiday lull in the iron market continues, but prices are maintained, and, indeed, the quietude is only noticeable in contrast to the push and rush of the two last weeks in December. Orders are still plenty and more than liberal enough to press the producing capacity of the district. The principal iron-makers of Birmingham remain quite as conservative as at the date of my last report, and all much more inclined to accumulate stock than to load themselves with engagements for future delivery. Propositions of that sort are being declined as a rule. It is stated that the Woodward people, who had been stocking up during the autumn, have recently made some large sales at the advance, and there is probably some truth in the statement, although it is thought that the transaction is not as heavy as rumored, because the Woodwards are among the most careful and conservative of our iron-masters, and it is known that they have been looking for and still expect better prices. Prices of pig iron at furnace may still be quoted as follows:

No. 1 Foundry	$16 50@— —
No. 2 "	15 50@— —
No. 3 "	14 75@15 00
No. 1 Mill	14 00@— —
Grey Forge	13 75@— —

* * *

Outside of pig iron matters, there is little of industrial importance to note that has not been referred to hitherto. The Birmingham rolling mills, foundries, machine shops and pipe works are all as busy as they can be, and all are reported as having orders well ahead. The new plant for the Pratt Company, now being built at the Linn Iron Works, will be ready for delivery in the spring. The buildings and plant for the chain works will soon be ready for active use. The buildings for the bridge works are to be commenced at once. Work is going forward on the new furnaces as fast as weather will permit, and, generally, everything is about as busy as I have ever known. The Central Bank of this city has increased its capital and become a national bank, the other banks have declared round dividends, business is good in all staple lines, and prosperity is apparent on every side. No failures have been reported since the opening of the year. There are not any working people out of employment. All this may not indicate a "boom," but it is significant of a pretty healthy and active condition of the community.

* * *

The multitude of intelligent strangers one meets at the club and around town is evidence of the extent to which Birmingham is advertised. The London Times is good enough to predict that Birmingham is destined to become the chief American point for metal-workers, and Herr Krupp, of Essen, Prussia, has declared that if he were 20 years younger he would emigrate and start a big gun plant here. Similar compliments have been paid us by John Roach in the United States, and by Mr. Nordenfeldt and others on the other side. The effect of these favorable opinions expressed by famous magnates of the world's metal interests is becoming fast apparent. Capitalists, engineers, chemists, furnace managers, foreign experts, and all sorts of people intelligently interested in the growth of such a place, are dropping in on us daily, and I must add that I have yet to meet the first one who was not agreeably disappointed in what he found here.

* * *

Enquiry for good and conveniently located iron, coal and clay properties has never been as active as at the present time. Another extensive sale of mineral lands is on the *tapis*, and will no doubt be closed within a few days, and much territory has changed hands, on a smaller scale, during the past week. The few choice selections left, combining proximity to coal, iron and limestone with good furnace sites, and carrying either coal or iron, are going up in price under an improved demand. Eastern capitalists who have had Birmingham and its environs in view for some time are taking a livelier interest in actual movements, and there seems every reason to believe that a great deal of outside money will be invested in the district this year. Northern and Eastern potters understand that the day is not far off when the pottery used throughout the South will be largely made in the South, always supposing that the kaolin beds of this section are successfully developed. That would constitute a break in the organization of the interest at large that would be almost revolutionary. It is true that much Southern kaolin finds its way to the East, but developments have not been generally in places or under conditions threatening the status of the trade. What they have appears good enough to the Northern potters, and it is not to be expected that, controlling as they do all our Southern markets, they will move in this direction until they have to. As a class they do not look kindly upon the prospect that before long the South will make its own cups and saucers, teapots and wash hand basins. So far from it, they nearly always cry down every Southern clay deposit, samples of which they can secure. This is not true of all, but the general run of potters will not admit that Southern kaolins are good for anything. Some time ago specimen lots of Alabama clay from the Allen mine were sent to an Eastern potter, who declared the material was quite inferior. Other specimens taken from identically the same barrels were shortly after sent to the same potter through third parties and represented as imported kaolin. The potter tested the samples thoroughly and asserted that "if anybody in America had such a deposit, it would be a fortune to him." Reluctant as the Northern manufacturers are to vary the situation, it is so certain that some of them will get down here pretty soon, that half a dozen are figuring with the idea of being the first one.

* * *

Since the discovery of pure silica glass sand at Birmingham was mentioned in the MANUFACTURERS' RECORD a couple of weeks ago, two parties from the East have had representatives looking into the matter. There is now little doubt that a supply equal to almost any demand can be had from the deposit south of Red Mountain, and only a mile and a-half from the city. Few places in this country could be found as favorably situated as Birmingham for the manufacture of glassware and its distribution throughout the Mississippi Valley, and I am satisfied that it will be added to our local industries at an early date.

* * *

So it seems that the tariff war has commenced in Congress! Mr. Johnson, of

Michigan, has introduced a bill to place ores of iron, copper, zinc and lead, and bituminous coal, salt and lumber, on the free list, and several bills have bobbed up from the North Carolina delegation providing for the total abolition of the internal revenue system. Skirmishing like that ought to precipitate a general engagement, and perhaps the sooner it comes the better. It will be strange if the free trade people do not find cause for astonishment before the matter has long been formally before the country. The old free trade South, for example, is for free trade no longer. To this assertion it might be replied that if true at all, it is only so as to the industrial interests of the section, while the agricultural element is as crazy on cheap wool hats and economical hoe handles as ever. There might be something in the objection if the enemies of American industry had taken hold of some other end of the tariff question; but since they have elected to make their attack upon raw materials, so called, they will be apt to learn that they have not thereby earned the lasting affection of the horny-handed son of toil. Of course the movement has palpably been engineered with the idea of avoiding the antagonism of the wealthy and highly organized manufacturing industries of the East whose productions are finished products, and some of whose representative concerns would be immediately benefited by free iron ore, copper ore, and so on; but if the free traders succeed in spiking some of the heavy guns that have demolished them in former efforts, they have also succeeded handsomely in filling the protection ranks with myriads of relentless foes. In Southern States like Alabama the entire sentiment is in favor of the improvement of interior waterways. Now, if we are to have free coals, everybody knows that the improvement of navigation of the Warrior, the Coosa and the Tombigbee rivers would be too foolish to talk about. We want those rivers improved that the Alabama coal-field may be connected with the Gulf at Mobile. With foreign cheap labor it is probable that foreign coals could be laid down at Mobile at as low a cost as our own mines could furnish them. Not only the industrial but the farming interests are alive to this menace to the general progress of the State, and free coals will not be accepted by our people without lively opposition. The question of free lumber is quite as important. The South is a heavy producer of cheap pine lumber, and in Northern and Western, and in Eastern markets even, would come into direct competition with the low-priced lumber of Canada. All classes of citizens in the South are interested in this matter. Countless people in every Valley and Gulf State are interested in saw mills, logging, or in timber tracts great and small. Remember that the greater part of the remaining timber area of the United States east of the Rocky Mountains is in the South, and that there are timber-land owners in almost every county of every Southern State but Texas, and it is easy to see that a measure which would injuriously affect the value of every acre of forest in the section could not be popular. Before the discussion is over I believe that the Congress will learn that the South is by no means kindly disposed to any reduction of the tariff on raw materials. How that proposition will be received by the mining districts of the North and West we know pretty well already.

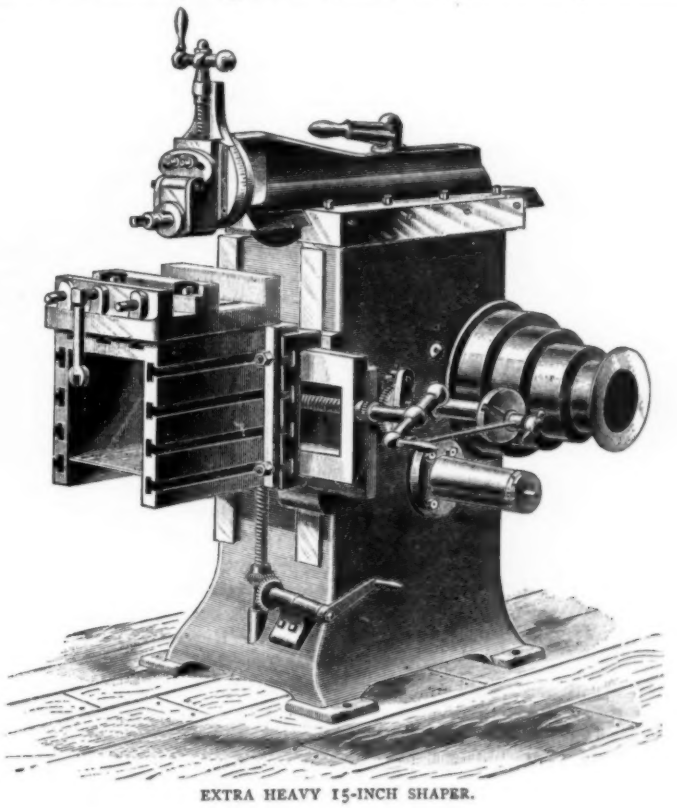
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"Gentlemen may cry, Peace! Peace! but there is no peace!" As long as the protective tariff remains a part of the policy of the government, the whisky men, whose monopoly depends upon the perpetuation of the corrupt and tyrannical internal revenue system, fully understand that their craft is in danger. Hence the activity of the Kentucky delegation in the movement to throttle American, and incidentally, Southern industries by cutting off the tariff on competing foreign productions. It is equally plain that as long as a vestige of the internal revenue wickedness remains, there will be "no peace" for legitimate native industry and labor. In truth, it is apparent that either the tariff or the internal revenue must be sacrificed in the war between the two interests, and our congressional representatives might as well make up their minds to that effect at once, and go into the fight accordingly. The people, too, should better appreciate this alternative, and organize such a sentiment and influence behind their leaders at Washington that the full strength and determination of the masses would be apparent alike from the windows of the White House and of the Capitol. At the same time, it is folly for the miners, manufacturers and lumbermen of the South to longer postpone the day of their offensive and defensive alliance against the free trade conspiracy. If they neglect this simple and feasible measure of safety, they may have occasion to bitterly regret it, both in pride and pocket.

G. B. WEST.

Extra Heavy 15-inch Shaper, Pattern of 1885.

The importance of perfect work in the manufacture of machinery, engines, etc., cannot be overestimated. Perfect machinery cannot be made with cheap or second-hand tools, and the Southern manufacturer will find that the best is the cheapest for him, in the long run, and only with good tools can he do perfect work and win the reputation desired. To those of this mind the accompanying description of the extra heavy 15-inch shaper, as shown in cut, will be interesting:



EXTRA HEAVY 15-INCH SHAPER.

In designing this machine the manufacturers have had special reference to convenience in handling, rapid and accurate working, and great power and rigidity on a long stroke. This is a crank shaper that while having an even motion on the forward stroke, returns the ram 3½ for 1 when on full stroke. The slides in which the ram works have a bearing 26 inches long, and correspondingly wide. The ram is 40 inches long and of extra strength. All sliding surfaces are scraped to perfect fit. The cone shaft is of steel, 1⅜ inches diameter, with bearings 15 inches long. The cone has four speeds for 3-inch belt, and the large step is 13 inches in diameter. The bearing of large gear is 12½ long and 2¼ inches diameter, and has a shaft through its axis by means of which the position of crank pin is changed at will, thus lengthening or shortening the stroke while ram is in motion or at rest. No binding device or tightening of nuts to secure it is necessary. The platen is extra long and strong, and work extending to the floor may be fastened to either side, or it may be removed and work bolted direct to the saddle. Travel of platen upon the cross-head, 22 inches.

Automatic cross feed adjustable from 1-72 inch to 3-16 inch, and feed takes place during return stroke in either direction. Rise and fall of platen, 15 inches. By removing the vise, a piece or block 22 inches long, 15 inches wide and 18 inches high may be planed upon it. The vise has jaws 12 inches long faced with cast steel, and opens 8 inches. The sliding jaw readily adjusts itself to any taper. The vise swivels upon a king bolt and fastens securely in any position. The tool slide has graduated head for angular feeds, and a down feed of about 5 inches. The crank pin is extra large, working in bronze sliding box. Ample adjustment for wear in all working parts and for keeping the platen in line with slides is provided. The cone on the countershaft is a duplicate of the one on the machine, and the fast and loose pulleys are 12 inches diameter for 3-inch belt. Countershaft should run 170 to 180 revolutions per minute. All adjustments of stroke, feed, speed and platen are from the front or working side. A new and greatly improved "circular feed" attachment is furnished with this shaper when desired, that is used without removing the platen, that admits of work being planed upon centers or upon a face plate, and feeds automatically. This shaper is built with great care from the best materials, and their performance is fully guaranteed by the manufacturers. Weight of shaper ready to ship, about 2,400 pounds.

This tool is manufacture by the Rochester Tool Works, Limited, Rochester, N. Y., who will be pleased to furnish any further information relative to this shaper or their planers.

Southern and Northern Farmers.

We commend to the attention of every free trader in the South the following article from the Atlanta Constitution:

"The Providence, R. I., Journal prints some very interesting figures to show the results of intensive farming in that section. We reproduce these figures in order that our farmers may see what can be done in Rhode Island, and in order to make some suggestions that seem to be pertinent to the occasion. The statement is based on actual measurements, weights and sales, and the results are derived from the cultivation of a seven-acre lot:

106¾ tons of beats	$1,281 00
Corn fodder	240 00
Early carrots	95 00
Late carrots	68 00
Turnips	64 00
Beets sold	80 00
Cabbage sold	500 00
Total	$2,258 00

COST.

Labor	$450
Horses	50
Manure, 50 cords, $8	400
	$900 00
Balance	$1,358 00

The mangold and sugar beets are estimated at three dollars less a ton than the crop of 1884 sold for, but no charge is made for interest on land. On the other hand the charge for labor appears to us to be altogether too high, about twice as much as would have to be paid for similiar service in the South. It is to be observed that the Rhode island farmers measure their fertilizer by the cord, instead of by the ton, and that is a very important factor in considering the results.

In the entire State of Georgia there are not seven acres of land that will not produce similiar or even better results; but suppose that every seven acres in the State should be as highly cultivated—would the result put money in the pockets of the farmers? Not to any great extent. The one market to which the Southern farmer can turn with confidence is the cotton market, and the more he raises—the more he "intensifies" his farming operations—the less remunerative that market becomes. Just at present the Wall street speculators and their organs have succeeded in beating down the price of bullion silver, and the price of cotton has fallen in sympathy; but even if it were otherwise, a general system of intensive farming would not produce the results in the South that it prodnces in the North.

The whys and the wherefores are very simple. The Southern farmer lacks a market for his diversified products. He is sure of nothing but a market for his cotton. In New England and in the West the large manufactories and the small industries give the farmer the most profitable markets. In the South the growth of these industries has been slow and is likely to be slower, owing to the energy with which the free traders in Congress and out of it are pushing their theories. Southern industries would be weak enough at best—weak enough, even if they enjoyed the benefits of the protection which has built up Northern and Eastern industries, but they cannot possibly compete with Northern and Eastern industries if the views of the Western free traders and doctrinaires are to dominate Congress.

But this is not the worst of it. If the tariff is to be revised where there is no longer any protection for American industries, the symptoms of development which have made their appearance here and there in the South will dwindle away and disappear, and the Southern farmer fifty years from now will be precisely in the same condition he is to-day—without a market and depending solely on cotton as his money crop.

This is the situation to which we commend the attention of Southern congressmen. There is no need why they should pay any further attention to Western cranks or Eastern fanatics. What the Southern farmers need is a market; they cannot have this market without the building up of Southern industries; Southern industries cannot be built up under the auspices of free trade. We ask Southern congressmen if the welfare of Southern farmers is not of more importance to them and to the country than the theories of the absolute free traders?"

ADVERTISERS wishing to reach the manufacturers of all classes, mining companies, steel, iron and hardware dealers of the entire South, cannot find a better medium than the BALTIMORE MANUFACTURERS' RECORD. We are always prepared to furnish proof of our claims as to circulation.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

ALABAMA.

A syndicate has been formed at Birmingham, Ala., to manufacture fertilizers from garbage. The capital will be $10,000, and the works will be built a short distance from that city.

James Hunter, Mobile, Ala., has purchased 20,000 acres of timber land in Washington county, Ala.

E. G. Maull, Benton, Ala., has rebuilt his mill recently burned.

The report referred to last week, that Murray & Stevenson, Anniston, Ala., will erect a machine shop, is incorrect. Edward A. Harrington will build the machine shop at their foundry.

Schock, Wood & Co., of Philadelphia, have secured a site at Birmingham, Ala., on which they will erect a stove factory, to employ about 12 hands.

The No. 1 furnace of the Woodstock Iron Co., Anniston, Ala., has been blown out for repairs.

The Montgomery Iron Works, Montgomery, Ala., contemplate enlarging their works. Part of the necessary machinery has been purchased.

Bivings, Duke & Co. have purchased machinery to double the capacity of their saw mill, four miles from Clanton, Ala.

The Brierfield Coal & Iron Co., Brierfield, Ala., are rebuilding their foundry and machine shops, reported last week as burned, loss $10,000.

ARKANSAS.

The Odd Fellows at Little Rock, Ark., will erect a three-story building, 75x100 feet.

The Searcy Valley Railroad Co., to build a railroad from Searcy to Conway, Ark., has been chartered with a capital stock of $400,000.

FLORIDA.

The City Council of Palatka, Fla., have given permit to a company to build waterworks.

The shops of South Florida Railroad, at Sanford, Fla., reported last week as burned, will probably be rebuilt.

The report, last week, that an ice factory will be erected at Tampa, Fla., is correct. It will be erected by the J. M. Long Manufacturing Co.

Sanchez & Haya are building a large cigar factory at Tampa, Fla.

GEORGIA.

The Georgia Chemical Works, Augusta, Ga., will, it is reported, spend $50,000 in making improvements and erecting new buildings.

W. A. Humphries and S. W. Marshall have received the contract for building a court house at Spring Place, Ga., at $8,700.

The Albany Artesian Ice Co., has been organized at Albany, Ga., with D. H. Pope, president; and Nelson Tift, H. H. Tift, John Mock, George B. Welch and W. E. Smith, as directors.

The Georgia Midland & Gulf Railroad Company have secured 25 acres of ground at Columbus, Ga., for depot and shop purposes.

Phillips & Garbett, Elberton, Ga., have, it is stated, purchased the Phœnix Iron Works at Columbia, S. C., and will move them to Elberton.

Privilege to lay pipes have been granted at Augusta, Ga., to a new gas company.

Nace, Winburn & Co., Atlanta, Ga., previously reported, will add some new machinery to their planing mill.

Several thousand dollars have been raised toward erecting an iron and brass foundry at Jesup, Ga.

C. M. Wheatley, Americus, Ga., contem plates establishing an iron and brass foundry.

KENTUCKY.

The Ahrens & Ott Manufacturing Co capital stock $100,000, the Giant Tobacco Works, capital stock $250,000, and the Old Kentucky Woolen Mills Co., capital stock $200,000, have been incorporated at Louisville, Ky.

Walters' brewery, at Louisville, Ky., is to be altered and improved, and new boilers are to be put in.

Mr. Miller is erecting a saw mill at Buena, Ky.

Reed & Wallace have located their saw and grist mill at Knoxville, Ky.

A bill has been introduced in the Kentucky legislature to incorporate the Hopkinsville Branch Railroad.

LOUISIANA.

The Ivens & Son Machinery Co., New Orleans, La., reported last week as incorporated, will occupy the foundry formerly used by Ivens & Son, and will increase its capacity by adding heavier machinery.

Joseph L. Bird, Washington, La., will rebuild his cotton gin and shingle factory, reported last week as burned, loss $4,000.

MISSISSIPPI.

J. B. Mattingly, Vicksburg, Miss., has purchased machinery for an electric light plant, which he will erect at that place.

A bill has been introduced in the Mississippi legislature to incorporate the Pensacola & Memphis Railroad.

MARYLAND.

The Schultz Gas Fixture & Art Metal Co., capital stock $100,000, has been incorporated at Baltimore by F. W. Schultz, John P. Judge, Henry A. Schultz, Henry Eppelsheimer and Clarence Dickerson to manufacture metal work and fixtures for gas and electric lighting.

A. A. Blakeney & Co. will put additional machinery in their cotton mill at Upper Falls, Md.

L. E. Williams & Co., Salisbury, Md., are putting a new 80-horse-power engine in their lumber mill.

The Lochiel Lumber Co., Bloomington, Md., are building new furnaces and making improvements at their saw mill.

W. F. M. McCarty, of the National Tube Works, McKeesport, Pa., has, it is reported, closed a contract for erecting gas works at Washington, D. C., to make water gas.

NORTH CAROLINA.

Mr. Clarke, of Boston, Mass., will reopen and work the Henderson Gold Mine, in Mecklenburg county, N. C.

The New York Gas Works Contract Co., previously reported, have secured the right of way, and will build gas works at Goldsboro, N. C. Work is to begin within three months.

The firm of Manquin, Webb & Oates, has been formed at Shelby, N. C., to manufacture tobacco. The machine shops of the Cleveland Manufacturing Co. will be fitted up for their factory. About 75 hands will be employed.

The building of a foundry at Monroe, N. C., is contemplated.

W. S. Carroll & Co., Greensboro, N. C., will rebuild their tobacco factory, reported last week as burned; loss $20,000.

The Durham Electric Light Co. has been organized at Durham, N. C., with J. S. Carr, as president; W. Duke, vice-president, and G. W. Watts, secretary and treasurer.

A 20-stamp mill, to be erected at the B. T. Coggins' mine in Montgomery county, N. C., is being negotiated for.

Newsom & Co. are erecting chilian mills at the Isenhour mine in Rowan county, N. C.

Arrangements are being made to erect 30-stamps and other new machinery at the Big Russell mine in Montgomery county, N. C.

J. S. Joyner, Franklinton, N. C., has added a grist mill to his saw and planing mill.

TEXAS.

Mr. Reast has completed his corn mill, near Denison, Texas.

John Scullen, of St. Louis, and others of Denison, Texas, have chartered the Denison & Washita Railway Co., capital stock $200,000. The road is to extend from Denison to the Red river.

J. W. Ozment, J. W. Bryan and J. M. Fullenwider, of Palestine, and J. F. Cronise, of Dallas, have incorporated at Palestine, Texas, the Edison Illuminating Co., capital stock $20,000. This company will erect the plant previously reported.

A $30,000 building will be erected at Corsicana, Texas, for the Odd Fellows' Orphans Home.

A. G. Wells, T. J. Coranoy, James G. Wells, E. L. Combs and others have incorporated at Houston, Texas, the Houston Lumber Manufacturing & Supply Co.; capital stock $30,000.

A roller flour mill will probably be built at Coleman, Texas.

C. K. Boase is erecting corn milling machinery at Pendletonville, Texas.

The Pioneer Mills Co., Abilene, Texas, will increase the capacity of their mill to 150 barrels per 24 hours.

TENNESSEE.

Improvements are being made at the Maryville Woolen Mills, Maryville, Tenn.

William S. Bransford, D. R. Kinnaird, W. S. Settle, F. C. Franklin and John K. Breast, will charter the Rock City Saddlery Co. at Nashville, Tenn., with a capital stock of $100,000.

The Mullally Oil Company has been chartered at Memphis, Tenn.

A stock company, to build a tobacco factory at Greenville, Tenn., is being organized.

William Craig, of Jamestown, N. Y., is investigating the advantages of Chattanooga, Tenn., as a location for a shoe factory.

The Winchester Spoke & Handle Co., Winchester, Tenn., have increased their capital stock, and are building an addition to their factory.

J. R. Campbell, Denmark, Tenn., will move his grist mill about 1½ miles from present location, and add a saw mill in the spring.

W. J. Palmer, Atlanta, Ga., contemplates starting a large soap factory at some point in the South. Is now corresponding with parties in Chattanooga, Tenn., with that object in view.

VIRGINIA.

Mason, Rinehart & Co. have leased the Big Hill Iron property in Botetourt county, Va., and will open iron ore mines.

It is stated that a company is being organized in Fredericksburg, Va., to establish a soap factory.

Bills have been introduced in the Virginia legislature to incorporate the Warm Springs Valley Railroad Co., the Richmond, Petersburg & Manchester Narrow-Gauge Railroad Co., to build a railroad from Richmond, or Manchester, to Petersburg, with A. J. Ford, Jr., C. C. Clarke, of Richmond, Charles Gee and Robert McCandlish as incorporators; the Lynchburg, Halifax & North Carolina Railroad Co.; the Mineral Railroad Co., with John P. Agnew, Park Agnew, L. D. Scott, Robert Andrews and others as incorporators, and the Chesapeake Dry Dock & Construction Co., to operate a dry dock and build ships, with P. C. Asserson, J. E. Simpson, John Callahan, J. F. Dezendorf and others as incorporators.

Ford, Moorman & Co., Lynchburg, Va., will probably rebuild their tobacco factory, reported last week as burned.

Kingsley Bros., Hamilton, Va., have erected a building in which W. V. Moore will place his machinery for grinding corn and other grains.

Spigle & Layman will erect a canning establishment at Fincastle, Va.

WEST VIRGINIA.

The Coalraine Coal & Lumber Co. has been chartered in West Virginia.

George H. Bardwell, Washington, D. C., B. F. Gould, J. H. Caldwell and T. B. Warner, Jr., of Philadelphia, and Thomas Caldwell, of Atlantic City, N. J., have incorporated in West Virginia the Petroleum Fuel Co. The capital stock is not to exceed $100,000, and the principal office to be at Philadelphia.

The Pittsburgh & Preston County Railroad Co., capital stock $100,000, has been incorporated in W. Va., by Charles Kautner, W. S. Armstrong, George H. Armstrong, L. R. Scott, and others of Preston county. The principal office is to be at Bruceton, W. Va.

The La Belle Iron Works, Wheeling, W. Va., contemplate making some additions to their nail factory.

BURNED.

Poitevant, Favre & Co's planing mill, at Pearlington, Miss.

The gin and mill of J. P. Glass, 5 miles from Marthaville, La.

Beck, Bransford & Ekdahl Furniture Co's factory, at Union City, Tenn.; loss $30,000.

Mitchell & England's distillery, in Burke county, N. C.

The Derby Dell Mills (woolen) owned by A. J. Tynes, near Tazewell C. H., Va.; loss $5,000.

The Raleigh Cotton Gin Co's factory, at Raleigh, N. C.; loss $3,000.

J. J. Lee's ginnery, in Elmore county, Ala.; loss $1,500.

Carpenter & Turner's mill, near Hulmeville, Ga., destroyed by flood.

The flour mill of Mr. English, 2 miles from Austin, Texas. Loss $5,000.

Robert Burton's gin near Sunny Side, Texas. Loss $2,000.

LOCKWOOD, GREENE & CO.

MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I.

Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.

$150,000 Oil & Gas Co.

CINCINNATI, O., Jan. 9, 1886.
Editor Manufacturers' Record:

The object of this company is to develop several thousand acres of leasable lands in Hancock county, Ohio; also thousands of acres in Pulaski, Wayne and Whitley counties in Kentucky—the former for light oil and the latter for lubricating oils and other minerals. We are organized under the laws of Kentucky; capital stock $100,000.

INTERIOR OIL & GAS CO.

LYNCHBURG, VA., Jan. 13, 1885.
Editor Manufacturers' Record:

Will probably rebuild at once our tobacco factory. FORD, MOORMAN & CO.

MONTGOMERY, ALA., Jan. 11, 1886.
Editor Manufacturers' Record:

We anticipate enlarging our works during the coming year. Have placed an order for part of the machinery, but will have to buy more yet.

MONTGOMERY IRON WORKS.

ERIN, TENN., Jan. 13, 1886.
Editor Manufacturers' Record:

We, with others, have purchased the cement property at Clifton, on Tennessee River, Tennessee, and expect to make cement, artificial stone, sewer pipe, etc., and will probably make our own barrel material.

HARRIS & BUQUO.

To Develop Coal Lands.

MONTGOMERY, ALA., Jan. 11, 1886.
Editor Manufacturers' Record:

I purchased last month 4,000 acres of coal lan ls in the Warrior Coal Field of Alabama, for myself and associates. A stock company is now being formed under the laws of Alabama with a capital stock of one hundred thousand dollars. It may hereafter be increased. C. W. BUCKLEY.

Soap Factory.

HOUSTON, TEX., Jan. 9, 1886.
Editor Manufacturers' Record:

We have established a factory on Washington street, with an entirely new process, (our own patent,) which shortens the time of making to about two hours. Our capacity is about ten thousand pounds per day.

COMPRESSED SOAP MFG. CO.

Saw Mill.

BEAUFORT, S. C., Jan. 14, 1886.
Editor Manufacturers' Record:

I am erecting a saw mill in Beaufort, and expect to have it completed by the first of February. Engine is sixty-horse-power.

W. H. MCLEOD.

Enlarging Capacity.

WINCHESTER, TENN., Jan. 12, 1886.
Editor Manufacturers' Record:

We have a spoke and handle factory here. The firm of Wenzer & Girton is changed by taking Mr. Wesley Woodward as third partner. The concern is now styled The Winchester Spoke & Handle Co. We have increased our capital. Are building an addition to our shop of 18x52 feet, and engine room 20x20 feet, putting in an extra 45-horse power engine and an extra Gleason lathe, and several other machines. Mr. Wenzer also runs a furniture factory in connection.

J. L. GIRTON.

ATLANTA, GA., Jan. 9, 1886.
Editor Manufacturers' Record:

We will put in some more machinery as we have already a large two-story mill, and all we need is a few machines to make our mill complete. NACE, WINBURN & CO.

Increasing Capacity.

ABILENE, MD., Jan. 10. 1886.
Editor Manufacturers' Record:

It is the intention of this company to increase capacity to 150 barrels per 24 hours; also, if crop will justify, to build a large elevator in the near future.

PIONEER MILLS CO.

Rebuilding Foundry.

BRIERFIELD, ALA., Jan. 13, 1886.
Editor Manufacturers' Record:

We have already gotten our new building fairly under way. Will build pattern shop, and foundry and machine shop all of corrugated iron. BRIERFIELD COAL & IRON CO.

$60,000 Machinery Company.

NEW ORLEANS, LA., Jan. 11, 1886.
Editor Manufacturers' Record:

The Ivens & Son Machine Company was incorporated January 1, 1886, capital stock $60,000, with privilege to increase to $250,000. Will occupy property corner Peters, Lafayette and Commerce streets, lately occupied by Ivens & Son. Will largely increase its productive capacity by adding heavier machinery; will build the Shendy engine, Double Truck and American cotton presses, and Ivens draining and irrigating pumps.

THE IVENS & SON MACHINE CO.

Iron Works Company.

BEAUMONT, TEXAS, Jan. 11, 1886.
Editor Manufacturers' Record:

The Beaumont Iron Works Co. was incorporated December 28, 1885, with L. P. Ogden, J. J. Crichton and E. C. Ogden as directors. We carry on a foundry, and are machinists and boiler makers.

BEAUMONT IRON WORKS CO.

TEXARKANA, ARK., Jan. 5, 1886.
Editor Manufacturers' Record:

The Felton Foundry & Manufacturing Co. are successors to F. A. Felton & Co. We have nearly completed our machine shop and iron and brass foundry, and expect to be running in a few days. The officers are J. H. Draughon, president; W. A. Kelsey, secretary; F. A. Felton, vice-president and manager; J. Deuchman, treasurer.

$25,000 Flour Mill.

SHERMAN, TEX., Jan. 9, 1886.
Editor Manufacturers' Record:

We are putting up a full roller mill to cost about $25,000. Expect to have it running in full operation by the 1st of April.

STINNETT, BUCKER & CO.

Two Cigar Factories and Ice Works.

TAMPA, FLA., Jan. 8, 1886.
Editor Manufacturers' Record:

J. M. Long Manufacturing Co. will put up ice works here. V. Martinez, Ybor & Co. and Sanchez & Haya are building two (one each) large cigar factories, to employ 600 to 800 hands. Operations now well under way.

H. R. BENJAMIN.

Will Rebuild.

GREENSBORO, N. C., Jan. 11, 1885.
Editor Manufacturers' Record:

We expect to rebuild our tobacco factory. W. Y. CARROLL & CO.

THE MANUFACTURERS' RECORD has indulged in the luxury of a new heading that is an improvement on its former one. We notice that the main features of the old heading are preserved, but in better and more business like form. The MANUFACTURERS' RECORD is deservingly prosperous and its measure of success is destined to be a large one.—Philadelphia Iron.

MINING NOTES.

By T. K. BRUNER, Salisbury, N. C.

RANDOLPH COUNTY.

In Randolph county signs of activity are apparent. The Winslow Mine is reported sold. Will be active this year.

The Wingingham Mine is turning out a fine grade of ore. The outlook is entirely satisfactory. They are putting up machinery as fast as is practicable.

The Gray Mine is soon to be put into operation. It has been regarded as a good mine for many years, and was worked in a small way thirty years ago.

USEFUL MINERALS.

North Carolina has a wide range of minerals which may be termed useful, *i. e.*, which are manufactured and used in the arts and otherwise. Professor W. C. Kerr, late State Geologist, reported 178 in his last work, published in 1880. Since this time there have been new discoveries which have enlarged the list. It is the purpose of this paper to point out some of these and give the localities where they are found in the greatest abundance. Mica and corundum have already been spoken of in sufficient length.

ALBITE

is a silicate consisting of silica, alumina and soda, and has a hardness of 6 to 7, and specific gravity of 2.5 to 2.6. It is abundant in the State, and is found in large quantities in Mitchell, Yancy, Madison and Macon counties.

ASBESTOS

is a general term applied to the fibrous kinds of amphiboli and pyroxene—but more generally to the former. It is also found as "tremolite" and "actimolite" in this State. It exists in great abundance, and Professor Kerr says is "one of the commonest associates also of the chrysolite beds heretofore mentioned, and it occurs also quite widely in the Laurentian rocks of the middle and western parts of the State." It is found in Macon, Madison, Mitchell, Jackson, Polk, Yancy, Caldwell and other counties. It is used in the manufacture of fire-proof materials, roofing, steam packing, boiler felting, lamp wicks, etc.

BARITE,

or heavy spar, has a hardness of 2.5 to 3.5, and a specific gravity of 4 to 7. In composition it is about two parts of baryta to one of sulphuric acid. It is also abundant in the State, in Guilford, Cabarras, Gaston, Madison and other counties, and is used largely to adulterate white lead, and is ground for use in the arts.

CHROMITE,

composed of one part ferrous oxide to two parts of chromic oxide, with a hardness of 5.5; specific gravity 4.3 to 4.5. It is found in Yancy, Jackson, Madison and other counties, and is valuable as the source of the many chromium compounds used in the arts.

GARNETS

are found in crystals, all sizes from a grain up to twenty pounds in weight, and are widely distributed throughout the States. Garnet is a silicate of various bases—protoxide and sesquioxide—with a hardness of 6.5 to 7.5, and a specific gravity of 3.1 to 4.3. In Burke county they have mills for crushing garnets. The product of the mills is shipped and manufactured into abrasives, etc. The clear varieties are used as gems. Some rare shades—Almandine among them—are found in Alexander and Burke, and in the mica mines of Mitchell and Yancy counties. There is a popular superstition, which appropriates the garnet to the month of January. Constancy and fidelity are supposed to be insured in the wearer.

GRAPHITE,

or plumbago, commonly called black lead, though it contains no lead, is essentially carbon (when containing no impurities), and is hexagonal in crystalization. It occurs in beds, hardness 1 to 2, specific gravity 2 to 2.5, like most of the other minerals mentioned, it is quite abundant in the State. In Wake, Stokes, Catawba, Burke, Cleveland and other counties it is found in workable quantities. It is used in the manufacture of pencils, stove polish, crucibles and as a lubricant.

KAOLIN

consists of silica and alumina, and the results from the decomposition of feldspar. It is of value for the manufacture of chinaware. It is found all over the State; in Guilford, Iredell, Ashe and Macon counties large beds exist. Professor Kerr relates the following: "A curious fact may be mentioned here which I came upon recently, that the first mineral export from North Carolina, if not from America, more than 200 hundred years ago, was kaolin from the mica mines of Mitchell and Macon; for it happened that at that time all Europe was wild in the search for the earth out of which chinaware was fabricated,—the Asiatics and Asiatic traders having carefully concealed their art from the outside barbarians of Europe. This mineral, therefore, bore a high value; and there is none better found in Europe to-day than that which the Indians "packed" from the smoky mountains to the coast under the name of Unakeh, their name for the smokies, (meaning *white,*) still called in places—Unaka in Mitchell and Unakoi in Cherokee These Indians were not miners, but this kaolin or white earth had been exposed like snow banks in huge dumps and open cuts by an ancient mining people—the mound builder—a thousand or two years ago, who obtained here the mica which is found so abundantly among the remains of those people, all over the Northwest to the great lakes."

The Half Decade That Needs a Census.

It would be of great service if there could be in this country some constant attention to the laws of progress in population, wealth and industry, similiar to that given by the Registrar-General in England; while all the data for establishing rules are more or less defective, there is still some discoverable relation of one to the other, as between 1870 and 1880 particularly.

The population of 1870 showed a gain of only 22½ per cent. over that of 1860, but that of 1880 was 30 per cent above that of 1870, which is more than 2¾ per cent. compounded annually. Assuming this rate to be approximately correct, we have for June 1, 1885, a total population of 57,442,081, and for June 1, 1886, a total of 58,091,738. On the total of 50,155,783, reported in the census of 1880, the annual gain is 1,379,284 in the first year, and for the census year now passing, it is 1,549,657. It is also probable that the current gain is more equally distributed than in former decades. It is large in all the Southern States, and large in all the centers of manufacture, especially in Pennsylvania, New York and New Jersey.

The general rate of two and three-quarter per cent. per annum thus shown to apply to the population of the whole country is also a probable rate for Philadelphia and other like cities; for all the greater manufacturing cities, in fact. These have attracted a large immigration from Europe for the past five years, and many thousands of working people have come to them from the manufacturing districts of England and the Continent.

There should be an approximate re-calculation of the population, and of the manufacturing and wealth of the several States at this half-decennial period, to be presented to Congress at its present session, and to be taken as an approximate measure of the existing condition. A new census is not so much wanted, to involve delays and abuses, such as characterized the last one, but an immediare return, based on rules which should be very well known, and such as can easily be derived from our national history so far, imperfect as that history is, in its statistical forms.—Exchange.

The Ide Automatic Cut-off Engine.

We illustrate this week the Ide Automatic Cut-off Engine, manufactured by the Foundry and Machine Department, Harrisburg, Pa. The advantages claimed for the Ide Engine are, wonderful economy in fuel, combined with extreme simplicity of engine, perfect regular speed and small space required for engine of great power.

The manufacturers invite particular attention to the general design and excellent construction of the Ide Engine; to its simple and efficient valve, valve gear and governor; the solidity of bed plate and pillow-block width. This construction makes a rigid frame that will not yield or spring, and all bearings will run cool when engine is running at a rapid speed and driving heavy loads with high steam pressure.

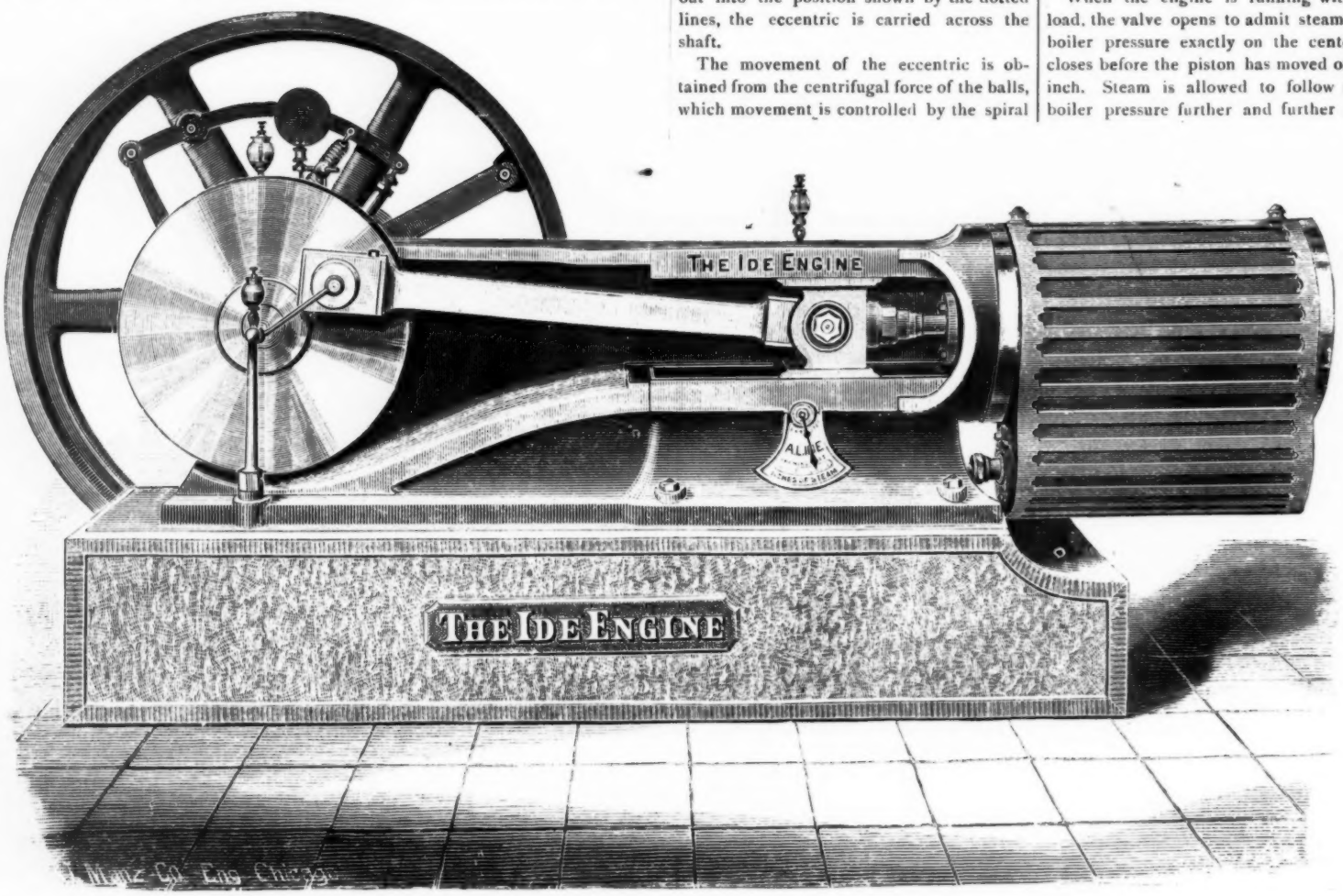
The cylinder is made from hard, close-grained charcoal iron, same as is used in car wheels. It is cast without heads, and the forward head, with its stuffing box, is held between cylinder and frame.

The cylinder is secured to end of frame, and overhangs. This construction insures a perfect alignment of the working parts at all times, as the cylinder is free at front end to expand when heated, and, in so doing, it cylinder. Only dry steam enters the cylinder from top of steam chest, and all water will pass off at opening in bottom of steam chest. The steam ports being on bottom side of cylinder, all condensation in cylinder passes directly out with the exhaust steam.

The Automatic Safety Governor is shown in position in the fly-wheel. The eccentric has a pocket projecting from the lower side to which a steel arm is bolted. This arm is pivoted near the rim of wheel. Opposite to this arm is a lug to which two steel arms are connected. These arms are connected to two bent steel levers, on which the fly-weights are placed. As these arms move out into the position shown by the dotted lines, the eccentric is carried across the shaft.

The movement of the eccentric is obtained from the centrifugal force of the balls, which movement is controlled by the spiral springs. The speed of the engine may be changed to suit requirements by shifting the weights, or by tightening or slackening the springs. The springs hold the eccentric at a point which gives the valve full throw, until the engine is up to its speed, when the centrifugal force of the weight is greater than that of the springs, and the weights fly out, moving the eccentric into such a position that it shortens the throw of the valve, and, at the same time, advances the lead. The dash-pot attached to the end of one of the levers controls the movements of the weights, preventing any sudden movement or jumping of the weights, when a large change of load occurs suddenly, and by its use a more sensitive adjustment of the springs and weights can be made, and a closer and more perfect regulation of speed can be obtained; it also holds the eccentric in a comparatively rigid position to overcome the rapid alternating resistance in moving the valve.

When the engine is running without a load, the valve opens to admit steam at full boiler pressure exactly on the center, and closes before the piston has moved one-half inch. Steam is allowed to follow at full boiler pressure further and further as the load is increased. When the maximum load is reached the full throw of the valve is given, and in order to keep up the speed steam is admitted at full boiler pressure up to three-fourths of the stroke. The large ports allow a very large opening to be obtained with a small travel of the valve, giving full boiler pressure in the cylinder even at such a high speed, and when steam is following over three-fourths stroke. The valve will close and cut off steam at a point that will just do the work and maintain the regular speed.



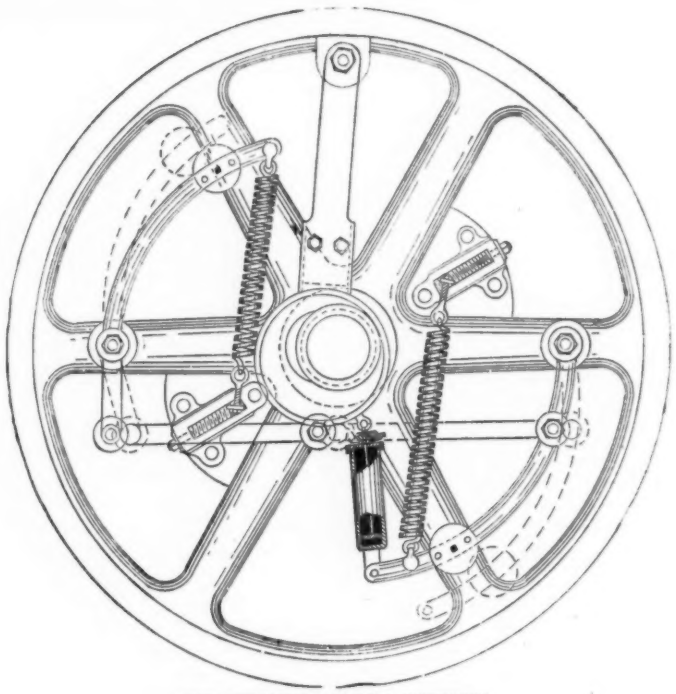
frame; the very large bearings and wearing surface; the superior quality of materials used; the perfection of workmanship, and the excellence of performance as shown by indicator cards.

All parts are steel, phosphor bronze and charcoal iron, fitted to templets and guages, and are interchangeable. Every engine is thoroughly tested by running in their works; valves and governor are adjusted and set by the indicator to operate perfectly under varying loads and any steam pressure.

No pains or expense has been spared to make it the best engine possible to procure for driving electric lights and other duties where it is of great importance to have a steady, reliable and economical power.

By its high rotative speed, smooth running, perfect regulation and reliability, the Ide engine is especially adapted for direct connection with electric lighting machines.

The massive frame and bed is a combination of the Porter-Allen box-girder bed with cross ribs, Prof. Sweet's straight line frame, and the original Corliss or girder frame, and has the excellent qualities of these combined. The base or lower portion forms a box-girder with cross ribs. This girder is made of sufficient depth to pass under the crank disc, and extends straight the full length of the frame. The top side of this box forms the lower slide. The web of metal connecting the box-girder with the top plate is a straight line of metal connecting the cylinder with the main bearing, close to the crank disc. The top plate is a curved girder, which is carried back the full



THE AUTOMATIC SAFETY GOVERNOR.

does not put a strain on the engine frame or foundation, and can not spring the frame and throw working parts out of line, the result of which is heating or breaking of parts.

Two important points are gained by placing the steam chest and valve below the

In reference to the Automatic Cut-off Governor the manufacturers say: "It is simple in construction and perfect in its operation; all its parts are in sight, and are readily accessible for cleaning. It is secured to the side of band wheel, and connects through eccentric on main shaft direct to rock shaft without the use of gearing, pulleys, shafts or belts. It is attached to the valve direct, and gives an open port at the beginning of each stroke, admitting steam to piston head at full boiler pressure, and varies the point of cut-off as the resistance requires, from the beginning, to three-fourths of each stroke without changing the lead. It acts instantly, and cuts off the steam at a point that will just do the work, and maintain the fixed speed of engine. The speed remains constant, regardless of the change of load or variation of steam pressure in boiler. The variation in speed from no load to the full power of the engine will be less than two per cent.

It is a safety governor, and will, under all

circumstances, control the engine, and will not allow it to run away or wreck; no belts to break or slip; no gearing or pinions to break; no shafts to heat, cut and stick—(all of these let engines run away.) If any part of the governor breaks or becomes loose, detached or deranged in any way, the result is to slacken the speed or stop the engine. Under no circumstances will the governor allow an increase of speed above the fixed limit, because each part of the governor is required to hold the eccentric in a position that will move the valve sufficient to open the ports. If any part of the governor or valve gear breaks, binds or becomes detached, or fails to work properly, the steam valve instantly ceases to open the ports, and the engine will stop. This is a valuable and important feature of the Ide engine."

For further information and prices address, the agents, Jackson & Tyler, 16 and 18 South Howard street, Baltimore, Md.

THE MARKETS.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, Jan. 13, 1886.

Since our last report there has been no further change. The volume of business continues fair, and prices remain as then quoted. The prospect for continued improvement is good. We quote:

Ref. Bar Iron, 1 to 6x⅜ to 1	₱ lb.	1.85@	2.10
" " 1 to 4⅜x1⅜ to 1	"	1.85@	2.10
" " ¾ to 2, round and square	"	1.85@	2.10
Hoop Iron, 1⅜ wide and upward	"	2½@	2¾c
Band Iron, from 1⅜ to 6 in. wide	"	2.30@	2½c
Horseshoe Iron	"	2½@	2¾c
Norway Nail Rods	"	5 @	5¼c
Black Diamond Cast Steel	"	8 @	9 c
Machinery Steel	"	3 @	5 c
Spring Steel	"	3 @	5 c
Common Horse Nails	"	10 @	14 c
Railroad Spikes, 5½x9-16	"	2½@	2¾c
Horse Shoes, ₱ keg			3 70
Mule Shoes, "			4 70
Steel Boiler Plate	"	3½@	3⅝c
Iron Boiler Plate	"	2¼@	4 c
Boiler Tubes			55 off list

There is no change in pig iron. The market is firm and prices same as reported last week, viz:

Baltimore Charcoal Wheel Iron (all Baltimore ore)	$26 00@27 00
Virginia C. B. Charcoal Wheel Iron	26 00@27 00
Anthracite, No. 1	18 00@19 00
" " 2	16 00@17 00
" " 3	14 00@15 00
" Mottled and White	12 00@13 00
Old Iron Rails	21 00@21 50
No. 1 Wrought Scrap	18 00@19 00
Old Car Wheels	15 00@16 00

HARDWARE.

The condition of the hardware market remains unchanged, owing to the excessively cold and stormy weather. There have been but few buyers in the market, and mail orders are small. This is, however, but temporary. In our report of last week, by a typographical error, the word tacks was printed jacks. Bolt ends, log screws and machine bolts have advanced about 10%. Nuts and washers are very firm, and large orders cannot be placed at prices ruling a few weeks ago. Some manufacturers of chain have withdrawn their prices, and only quote on application.

The steel goods combination is very strong, and there is every prospect of the advance being maintained. The advance of about 2% on maslin kettles, saucepans, etc., has been firmly held. The Southern Department of the Patton Manufacturing Co., Sam'l G. B. Cook & Co., agents, report that large orders are being received at present prices.

Hubbard, Bakewell & Co. have advanced Planters Eye Hoes 5%, and are full of orders to April 1st.

The low prices existing on bright wire goods are one of the enigmas of trade, the price of wire, which enters so largely into their cost, having advanced considerably, whilst the manufactured goods are lower than for many years. There are rumors of an advance in axes, and it is more than probable the present very low prices will be advanced sufficient to cover the advance in material, and to afford the manufacturers a fair profit. The indications strongly point to a healthy reaction in trade, and a good spring business may be expected.

Since writing the above we have notification of advance on iron nuts, from ½ to 3 cents per ℔., according to size.

Nails are in moderate demand, with prices as last quoted—$2.50 to $2.60.

Philadelphia Iron Market.

PHILADELPHIA, January 12, 1886.

The week opened with a strong market. Gray Forge is in active demand at $16. Several large contracts have been placed for spring delivery. Makers are holding back, and buyers are anxious. The anthracite interests have not been in as good a condition for two years. The weekly production is steadily increasing. Two or three new furnaces will blow in within two weeks. The rail companies are negotiating for large lots of Bessemer pig iron, the inquiries covering 30,000 tons. To-day's quotations are $20.50 to $21, but lower prices will be taken for the irons under inquiry. The bar iron men meet Wednesday and will, no doubt, ratify the advance that has taken place. Merchant bars are selling at $1.80 in a small way. A number of inquiries were made to day for large lots, ranging from 100 to 300 tons, and are aggregating 1,200 tons in all. Common iron is $1.55; medium $1.65. Plate iron is under better inquiry, and the mills are booking orders. Sheet iron is improving in demand, and prospects for an advance in card rates. Several lots of steel rails have been quietly contracted for for summer delivery at $34 to $35. Small lots will be quoted shortly at $36. A good many old rails could be sold at $20 to $21. Old steel rails have advanced to $17.50 to $18. Two or three brokers have orders for large lots. Scrap is rather scarce, owing to the cold weather, and demand is improving. Nails are quiet. The coal trade is not very active, especially for Eastern and Southern shipments.

Cincinnati Iron Market Report

Specially reported by ROGERS, BROWN & Co., Pig Iron Commission.

CINCINNATI, Jan. 11, 1886.

Heavy buying continued during the week under review, but on Friday all rates on Southern irons were withdrawn by railroads south of the Ohio, pending a proposed advance, and this had the effect to stop all business from that quarter. The advance in rates contemplated is 55 cents per ton, and this, if carried out, will further advance all Southern prices. The Tennessee Coal, Iron & Railroad Company, the largest producer in the South, withdrew from the market on all grades 7th inst., having over 30,000 tons of orders booked ahead of make. Mahoning Valley prices have been further advanced, No. 1 Mill now being held at $16.00 cash at the furnaces. We revise general quotations on the basis of cash Cincinnati delivery:

HOT-BLAST FOUNDRY.		
Ohio and Southern Strong Coke No. 1	$18 00@18 50	
" " " " No. 2	17 00@17 50	
" " " " No. 3	16 50@17 00	
Ohio Soft Stonecoal, No. 1	18 50@19 00	
" " No. 2	17 50@18 00	
Mahoning and Shenango Valley Coke, No. 1	19 50@20 50	
CHARCOAL IRON.		
Hanging Rock, No. 1	$21 00@22 00	
" " No. 2	20 00@21 00	
Tennessee and Alabama, No. 1	19 00@19 50	
" " No. 2	18 00@18 50	
FORGE.		
Strong Neutral Coke	$15 50@16 50	
Mottled " "	14 50@15 00	
Cold Short	14 50@15 00	
CAR WHEEL AND MALLEABLE.		
Southern Car-Wheel Iron	22 00@24 00	
Hanging Rock C. B.	28 00@30 00	
" " W. B.	22 00@24 00	
Lake Superior Malleable	24 00@25 00	

Specially reported by E. L. HARPER & Co.

CINCINNATI, January 11, 1886.

The market for pig iron continues strong and fairly active; still, we cannot but feel that the present "spurt" has not come to stay and is insubstantial. The heavy buying which created the present market was not actuated by a desire to supply consumers' wants so much as a feeling among them that prices had reached the ebb of the tide, and that the risk in largely anticipating requirements was only nominal. In view of the small amount of business moving in foundry and manufacturing circles, who consume necessarily the large end of the pig iron product, we look upon the demand as being to a great degree a speculative one, and, with the reports of resumptions of furnaces throughout the country, stimulated by reports of revivals in the business, we anticipate a reaction such as affected the market during last summer, when the market advanced largely in a temporary scarcity, but reacted to the old figures when the idle mills resumed operations. The furnaces in this neighboring vicinity are either in full blast or preparing to go into blast, and no good reason exists. We quote as follows:

FOUNDRY.		Cash.
Hanging Rock Charcoal, No. 1	$18 50@19 50	
" " " " 2	17 50@18 50	
Southern Charcoal " 1	17 50@18 50	
" " " 2	16 50@17 50	
Strong Neutral Coke, " 1	17 50@18 50	
" " " " 2	17 00@18 00	
American Scotch, " 1	17 50@18 50	
GREY FORGE.		
Neutral Coke	15 50@16 00	
Cold Short	15 00@16 00	
CAR WHEEL AND MALLEABLE.		
Hanging Rock, strictly cold blast	25 00@26 00	
Hanging Rock, strictly warm blast	21 00@21 50	
"Cranberry," N. Carolina Warm Blast	22 25@22 75	
Amherst and Virginia Warm Blast	20 50@22 00	
Lake Superior Charcoal, all grades	20 00@22 00	

Louisville Iron Market.

Specially reported by W. B. BELKNAP & Co., Nails, Wire, Iron, Hardware, Carriage and Wagon Goods.

LOUISVILLE, KY., Jan. 11, 1886.

The new year comes in eagerly scanned by all. Will it bring us better fortune than the 1885 combination, which did not seem to draw the big prize looked for? By dint of conclaves and mysterious withdrawals of prices it would look as though the manufacturers had arranged with the fickle goddess to favor 1886, and like the darkeys magical 4, 11, 44, which always draws big on Christmas day, it is to delight the wondering crowd.

One finds in his mail every day some salty gossip about the near birth of that child of so many prophesies, the boom. There may be some doubt as to authenticity of the parentage, but applicants, to father the result, will not be wanting. The change of the lock list is discouraging. It looks too much like old times. But the news of an advance in lower grades of steel, hinges, bar iron, etc., has undoubtedly stimulated some demand. Not yet, however, a very hearty one. The tightness of money in this immediate section has a serious effect upon the placing of any large orders, and until the country merchant can collect some of his old debts he is foolish to incur new. The demand for nails is fairly active at advanced figures, but apparently certain manufacturers are not so busy but that they can get up some spicy document about the gates that have been so long ajar being closed against those unwashed in the licensed pool.

Orders for hardware are confined exclusively to what are termed seasonable goods, which are active. We quote:

Bar Iron	1 80	@	1 90
Cresent Steel	10	@	12
Plow Steel slabs	2 50	@	2 60
No. 27 Sheet	3 10	@	3 20
Galvanized sheet, best	50	@	55%
Galvanized Iowa barb wire	4 75	@	
Burden Shoes	4 00	@	4 10
Juniata Shoes	3 70	@	3 75
Carriage Bolts			75&10%
Steel nails	2 70	@	2 80
Iron Nails	2 60	@	2 70
Rope, Sisal	8	@	8½
Rope, Manilla	12½	@	14
Screws, American Screw Co's list	75	@	80%
Axes	6 50	@	6 75
Cross cut saws, wide, per foot	26	@	38cts.
Cross cut saws, narrow, per foot	21	@	23cts.

With concessions to large or wholesale buyers.

Specially reported by GEO. H. HULL & Co., Commission Merchants for the sale of Hot and Cold Blast Pig Iron.

LOUISVILLE, KY., Jan. 11, 1886.

The market for pig iron during the past week has been very active, and sales for about twelve thousand tons have been booked at full prices. The advance has been fully established. The furnaces are continuing in about the same position, that is, discouraging everything tending to a further advance, and though some will not quote at all, yet others, as far as ability will allow, are endeavoring to set the demand at full market prices. We quote for cash in round lots as below:

PIG IRON.	
Southern Coke, No. 1 Foundry	$18 00@18 50
" " " 2 "	17 00@17 50
" " " 2½ "	16 50@17 00
Hanging Rock Coke, No. 1 Foundry	18 00@18 50
" " Charc'l, " "	19 00@20 00
Southern Charcoal, No. 1 Foundry	18 00@20 00
Silver Gray, different grades	16 50@17 00
Southern Coke, No. 1 Mill, Neutral	16 00@16 50
" " " 2 "	15 00@15 50
" " " 1 " Cold Short	15 50@16 00
Southern Charcoal, No. 1 Mill	16 50@17 00
White and Mottled, different grades	13 00@13 50
Southern Car Wheel, standard brands	23 00@24 00
" " " other brands	17 00@21 00
Hanging Rock Cold Blast	24 00@25 00
" " Warm "	18 00@21 00

List of Patents

The following Patents were granted to citizens of the Southern States, bearing date Jan. 5, 1886. Reported expressly for this paper by Louis Bagger & Co., Mechanical Experts and Solicitors of Patents, Washington, D. C.

Artmann, Frederick, Lexington, Miss. Combined cooking stove and baking and warming oven 333,714
Baily, O. W., Enterprise, Fla. Plant-protector 333,810
Camp, D. C. and H. P., Gainesville, Ga. Gearing 333,826
Champion, J. P., Gainesville, Ga. Nut-lock. 333,502
Cox, J. H., and E. S. Willey, Fairmount, Md. Steering apparatus 333,923
Faires, J. J., McKinney, Tex. Stalk and weed-cutter 333,938
Fairless, W. H., Portsmouth, Va. Lathe-center 333,619
Fennerty, J. M., Memphis, Tenn. Car-window 333,690
Galbraith, G. M., Oxford, Ky. Tobacco-drier. 333,511
Garman, A. M., Sinking Creek, Va. Gate-hinge 333,622
Gorrell, C. L., Bel-Air, Md. Stock-car 333,747
Hansen, Ludvig, and A. Smith, Wilmington, N. C. Apparatus for distilling wood 333,750
Haydn, George, Baltimore, Md. Bilge-water ejector 333,753
Hinman, G. W., Paducah, Ky. Churn. 333,629
Janvier, E. P., Still Pond, Md. Gage-wheel attachment for drill-teeth 333,858
Liddell, W. J. F., Charlotte, N. C. Machine for molding pulleys 333,765
McFarland, A. L., Palatka, Florida. Track-laying machine 333,770
Meyer, August, Baltimore, Md. Automatic safety gas burner 333,653
Miller, J. T., Atlanta, Ga. Loose-pulley 333,962
Moore, J. S., New Orleans, La. Rice huller and cuticle-remover 333,965
Oberndorfer, Abraham, Norfolk, Va. Sash-cord fastener 333,775
Perry, D. L., Mount Solon, Va. Washing-machine 333,886
Shugert, T. W., and C. D. Clifton, Dublin, Tex. Insecticide 333,893
Tucker, J. W., Springville, Ala. Car-axle box 333,981
Walter, W. C., Richmond, Va. Bed-clothes securer 333,905
White, G. W., Belle Mina, Ala. Nut-lock 333,580
Wilcoxson, C. W., Farmersville, Tex. Harvester truck 333,909

PATENT LAW. TRADE MARK LAW.

PAUL BAKEWELL,
Attorney at Law,
79 & 80 Turner Building, 304 8th St., ST. LOUIS, MO.
REFERENCES:
Branch, Crookes & Co.,
Liggett & Myers Tobacco Co., St. Louis.
Excelsior Manufacturing Co.,

C. D. MOODY,
Patent Solicitor,
AND EXPERT IN
—Patent Causes.—
No. 710 Olive Street, ST. LOUIS, MO.

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Chattanooga Iron Market.

Specially reported by LOWE & TUCKER, Brokers and Commission.

CHATTANOOGA, TENN., Jan. 11, 1886.

The close of the past week has been signalized by the coldest weather here that has been experienced for many years, the indicator showing one degree below zero.

Thus far into the new year we have to report an increased demand for pig iron from the entire South, in quantities ranging from car loads to 50 and 100 ton lots, which are placed at ruling rates, which are firm and show no disposition to weaken. While the market may be said to be at a stand still, there is evidently an under current being manifested that there will be an advance in the near future. The furnaces are in an independent position; several round lots have been sold at present rates, and more orders are being offered, but, so far as can be ascertained, the furnaces are not disposed to contract, excepting for delivery in the near future. We continue quotations as last quoted:

No. 1 Foundry	$15 50	@16 50
No. 2 Foundry	14 50	@16 00
American Scotch	14 50	@15 50
Gray Forge	13 00	@14 00
Car-Wheel Iron	23 00	@25 00
Ores, Red and Brown	1 50	@ 2 25
Furnace Coke	2 00	@ 2 30
Nails, car-load lots, 30 days	— —	@— —
Bar Iron, per 100 lb	— —	@ 1 65
Old Rails	— —	@18 50
Old Wheels	— —	@14 50
Wrought Scrap, No. 1	— —	@— 60
" No. 2	— —	@— 50
Cotton Tie Clippings	— —	@— —
Cast Scrap	— —	@— —
Railroad Splices	— —	@ 1 75
Railroad spikes	— —	@ 2 00
Light Steel Rails, long ton	— —	@— —
Barb wire—Cambria link	— —	@— —
Barbed wire—four point galvanized	—	@— —
Barb ware	—	@— —

St. Louis Iron Market.

Specially reported by W. H. SHIELDS, Pig Iron and Iron Ore, No. 305 Olive Street.

ST. LOUIS, Jan. 11, 1886.

The market, as a whole, is somewhat irregular, and it is doubtful if we will have the advance anticipated with the opening of the new year. The lines of business do not seem to respond. I quote nominally as follows:

HOT-BLAST CHARCOAL.		
Missouri	$16 50	@18 00
Southern	18 50	@19 50
Ohio	— —	@— —
COKE AND COAL.		
Missouri	16 50	@18 00
Southern	17 50	@18 50
American Scotch	18 00	@21 00
MILL IRONS.		
Missouri	16 00	@17 00
Southern	16 00	@16 50
CAR-WHEEL AND MALLEABLE IRON.		
Southern	20 00	@24 00
Lake Superior	21 00	@23 00
MISCELLANEOUS.		
Old Rails	21 50	@22 00
Old Wheels	16 00	@17 00
Connellsville Coke, East St. Louis Iron, par.	5 30	@— —

TRADE NOTES.

Otto vs. Steel.

[Abstract from English journals.]

The important case of Otto vs. Steel, which has been fought for sixteen days before Mr. Justice Pearson in the chancery division of the high court of justice, London, England, ended December 19, with judgment for the plaintiff. There was a formidable array of counsel and scientific witnesses for the prosecution, consisting of five lawyers and three scientific witnesses, and the other side was also ably represented. The point at issue was the validity of Dr. Otto's patent of 1876, which was strongly contended for already in Otto vs. Linford some years ago, and then decided in favor of the well-known inventor. The defendant admitted that his engine was an infringement of the Otto patent, and, if it were valid, he was liable under the statute. The defendent sought to invalidate the first claim on particulars of objections not dealt with in the former case vs. Linford. From the plain evidence, furnished by the scientific witnesses, the judge decided that the first claim is strictly accurate according to Dr. Otto's specification. He also concluded that the mixture, when fixed, is as specified by Dr. Otto, and has exactly the effect which he describes in his first claim; that his invention has not been anticipated by any of the specifications which have been put in before him, and that therefore Dr. Otto's patent is a valid and good patent.

The defendent was given one month, within which his engines should be given up. A petition for having the injunction suspended for a longer term was refused, on the ground that this action was the second in which the court had declared in favor of the patent.

SOME three years ago the E. M. Birdsall Co., manufacturers of portable and traction engines, threshers, saw mills, etc., opened a branch office in this city on North street, under the management of Mr. Wm. R. Emerson. The business here outgrew the building, and Mr. Emerson moved to the large warehouse No. 6 North Liberty street, Under his energetic and efficient management it was not long before the business had reached such proportions as to again necessitate additional space, and a building was erected for them, by Messrs. A. Hoen & Co., on North street, adjoining the Hoen building corner Lexington and North, and on the site of the house first occupied by the Birdsall Co. In architectural design and finish it is a counterpart of the Hoen building. The inside arrangement is according to plans of the Birdsall Co., and every modern improvement and convenience is provided, including steam-heating arrangement, elevator with hoisting capacity of 10 tons, etc. The Birdsall engines, saw mills, etc., have a high reputation and their sale in the South is constantly increasing. The general manager, Mr. Wm. R. Emerson, will be glad to furnish catalogues and prices.

ELSEWHERE will be found an advertisement of the Ewart Detachable Chain Belting, which is designed for the rapid and economical handling of grain, malt, saw dust, coke, clay, phosphates, chemicals, broken stone, ores, etc. It has become very popular wherever used, and in a great many instances has entirely superseded all other belting. The general agent for the South, Mr. R. Swormstedt, No. 7 S. Frederick street, Baltimore, states that the sales are steadily increasing. He has recently introduced it into a large number of mills, and it has been found entirely satisfactory. A handsomely illustrated catalogue describing this belting and the uses for which it is adapted will be sent free on application.

THE Meech plant erected at the Excelsior mine, Colorado, having proved a success, it is stated, that a number of companies which were "waiting to see" have decided to try this process, and are making arrangements with Meech & Co., of Cleveland, Ohio, for plants to be erected between this and May, 1886.—Engineering & Mining Journal.

THE Worcester Electric Light Co,, Worcester, Mass., have ordered a 60-horse-power Armington & Sims engine of the Jarvis Engineering Co., of Boston. This makes the fifth engine of this make they have purchased, and shows their appreciation of its advantages. This electric light company are paying regular dividends, and order the new engine owing to the increased demand for lights.

THE Buffalo Hammer Co., Buffalo, N. Y., have just issued a very attractive catalogue with illustrations, prices, weights, etc., of their hammers. They state that their hammers are all forged from solid bars of crucible cast steel, manufactured expressly for their use, and every hammer bearing their name is fully warranted, and any proving defective will be replaced. They call attention to a reduction in list price of blacksmiths', machinists' and engineers' hammers, and some others. The catalogue will be furnished on application.

HALL STEAM PUMP CO., of 91 Liberty street, New York, have received notice that they were awarded the first premium, a silver medal of the Franklin Institute, for Duplex Steam Pumps, at the late Novelties Exhibition, Philadelphia.

MESSRS. JACKSON & TYLER, the well-known machinery dealers on S. Howard street, Baltimore, say that business is improving and indications are promising. They do a large Southern business in engines, boilers, etc.

THE "American," of Boston, more than sustains its well earned reputation as one of the best managed hotels in New England. Particular attention is paid to the comfort of guests and a desire to please is apparent in all parts of the house.

SIX tons of ore, from Ashburnham, Mass., was put through the Wiswell mill last week. The result was sent to the Philadelphia mint, and they returned $21.07 per ton. The ore was a granite feldspar, although from thirty assays, which average over $20 per ton, there was no appearance of gold in the ore, or the slightest showing in the jars after pulverizing and washing carefully. This result is credited to the electric current passing through the pulp

REMINGTON & Co., Wilmington, Del., are enlarging their machine shops, and are adding to their machinery, preparing themselves to carry out a contract with the Hall Steam Pump Company, of 91 Liberty street, New York, for manufacturing the Hall Duplex Steam Pump, which has, of late, been attracting much attention from pump users and experts in hydrants.

WE call attention to the advertisement of F. H. Clement, manufacturer of wood-working machinery, which appears in another column. Mr. Clement comes before the readers of the MANUFACTURERS' RECORD as an experienced manufacturer of all kinds of wood-working machinery that has stood the test for years. He claims first-class work and low prices.

His new catalogue and price-list will be sent free upon application.

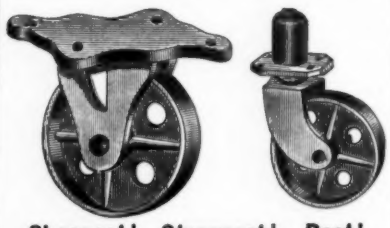
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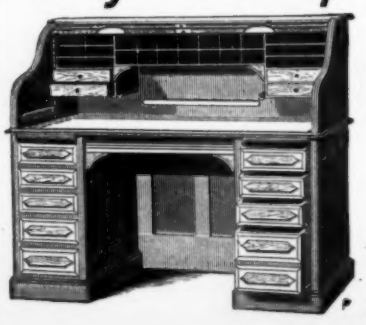
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Longwood is a town of 40 acres and about 200 inhabitants in South Florida, 200 miles south from Jacksonville. It lies on the spine of the peninsula. The South Florida Railroad passes through the town on the line to Kissimmee, the present Southern terminus. There is railroad connection from Longwood, East and West, to respectively, the Atlantic coast via Sandford, and to the Gulf coast at Tampa. The neighboring country is comparatively thickly settled, the County of Orange having increased its population from 6,000 in 1880 to 16,000 in 1885. Its elevation and character of soil, draining off both East and West, secure unusual healthfulness, attested by experience, and by the appearance of the people.

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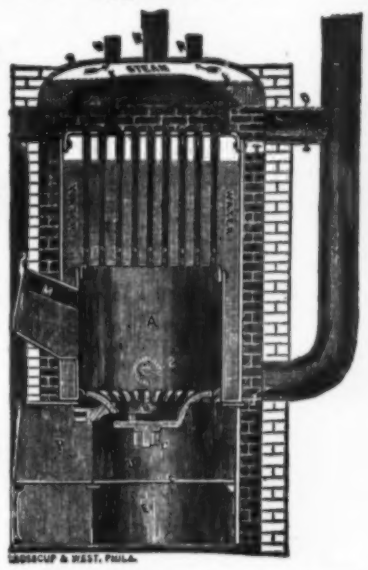
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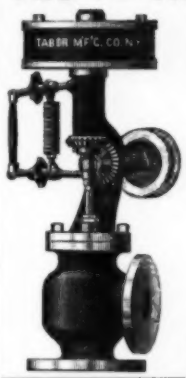
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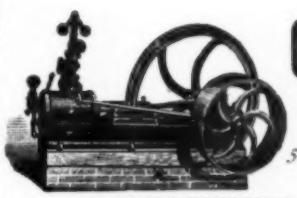
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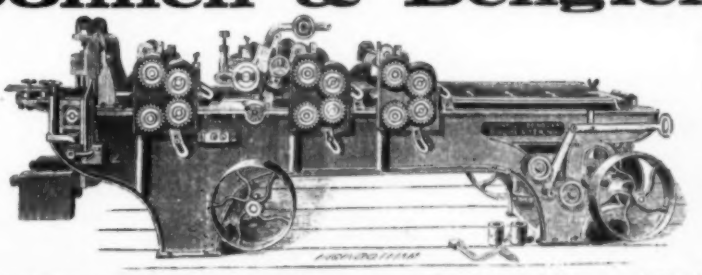
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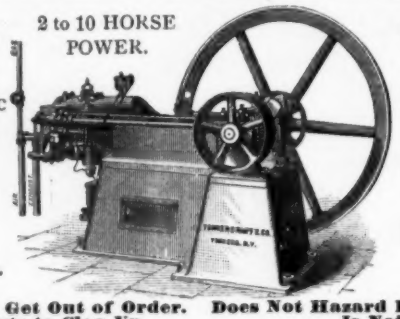
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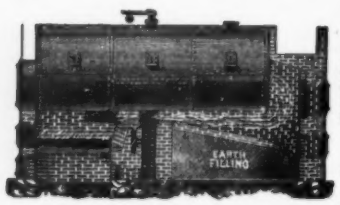
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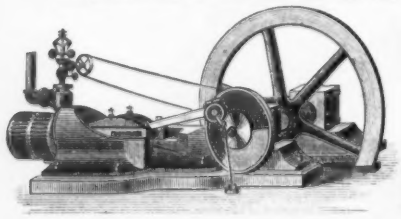


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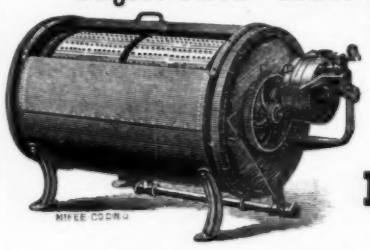




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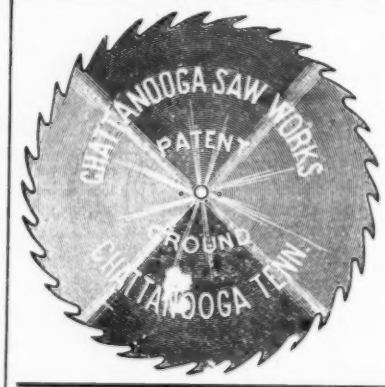
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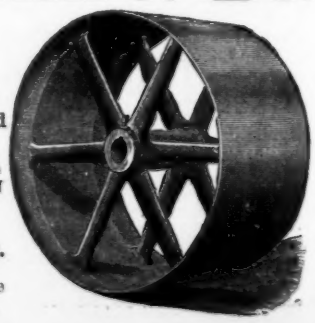
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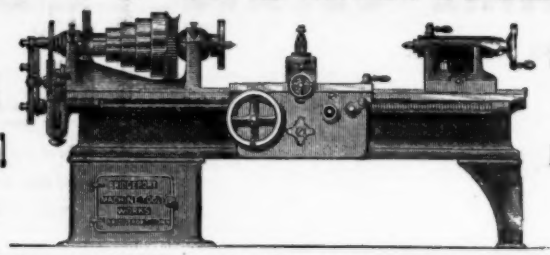
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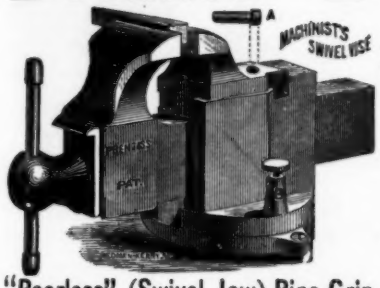
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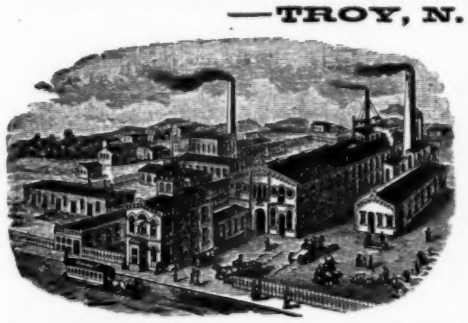
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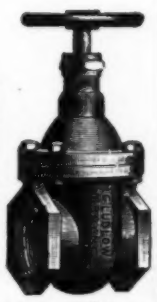
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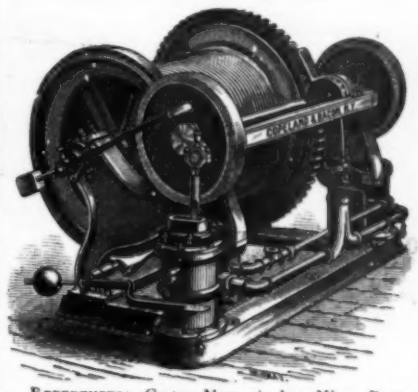
IMPROVED SELF-ADJUSTING INJECTOR OF 1876, started, stopped and regulated as to capacity by one lever.

FIXED NOZZLE AUTOMATIC INJECTOR OF 1885.

Either a lifter or non-lifter; no extra valves or fittings required; tubes can be removed without disturbing pipe connections; is perfectly automatic in its action; requires no especial manipulation to operate it.

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Winding Engines, Furnace Hoists, Mine Hoists.

(With or Without Boilers.)

"Mining PLANTS," Concentrating Works and Dredging Machinery Furnished Complete.

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REFERENCES:—Croton Magnetic Iron Mines, Brewster's, N. Y. Crown Point Iron Co., Crown Point, N. Y. Belvidere Iron Co., 52 Broadway, New York. Sea Island Chemical Co., Beaufort, S. C.

The Babcock & Wilcox Water Tube Boilers.

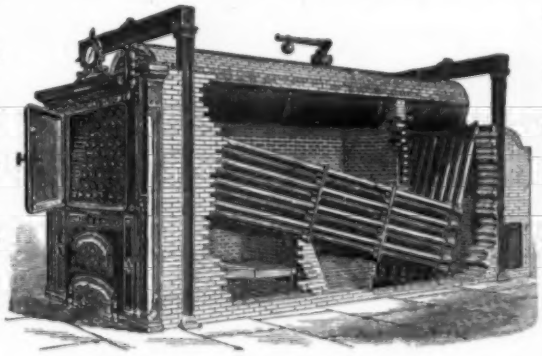
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Cast Pulley Castings

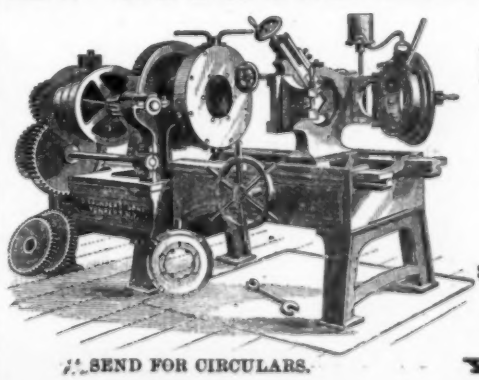
Machine-molded Pulleys save from 10 to 20 per cent. in turning, balancing, and also in weight; and, being perfectly proportioned, are far stronger than hand-made PULLEYS. We have a capacity of 120 pulley castings a day, ranging from 6 inch diameter, 11 inch face, to 36 inch diameter, 24 inch face. ☞ We also keep a large assortment of Journal-box Castings, Face Couplings, Set Collars, Boiler Fronts, etc., on hand. ☞ Send for Price-Lists.



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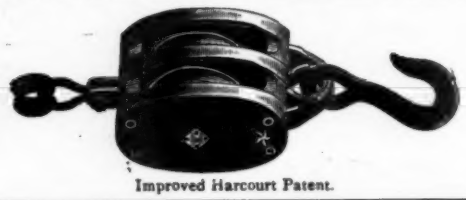
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Improved Roller Bushed Iron Sheave.

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Improved Harcourt Patent.

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Improved Self-Locking Link Snatch Block.

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EWART'S DETACHABLE LINK BELTING

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Send for Circular and Sample.

It pays for itself in preserving the belts.
CHEAP.

SAVE YOUR POWER,

BELTING AND MACHINERY.

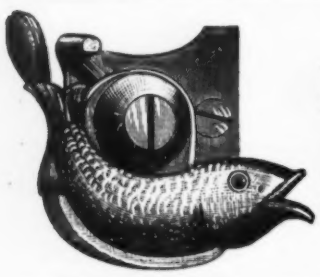
Durable and easily applied.
The belt does not have to be taken off.

National Pulley Covering.

The loss of power by slipping of belts amounts to from 10 to 40 per cent., according to the amount of shafting. This can be added to the CAPACITY OF THE MACHINERY without increasing the labor on the engine, OR, it can be deducted from the FUEL without decreasing the capacity of the machinery.

H. S. DULANEY & CO., Sole Proprietors & Manufacturers,

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LIESCHE'S
Burglar-Proof Sash Lock and Automatic Window Holder.

Cheapest, Strongest and only practical Automatic Lock and Holder on the Market. Samples free to the trade.

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JOSEPH B. MATTHEWS & CO.

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Roll, Sheet and Platers' Brass

GERMAN SILVER.

COPPER, BRASS AND GERMAN SILVER WIRE,

BRASS and COPPER TUBING,
BATTERY and PLATERS' SILVER, &c.

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HARDWARE.

Baltimore WHOLESALE Prices.

ANVILS.
Eagle and Vulcan ... ₱ lb. 10 c. dis 20%
Wright's ... 9¾c
Armitage's Mouse Hole ... 8½c
Trenton ... 10¾c
Wilkinson's ... 10½c

AUGERS AND BITS.
Conn. Valley Mfg. Co, Douglass Mfg. Co, Ives } dis 60&10&10& 7½% from list of Jan. 7, 1880
Cook's Douglass Mfg. Co ... dis 60&10%
Griswold ... dis 50&10%
Patent Solid Head ... dis 25%
Russell Jennings' Auger, Dowell, Machine-Dowel and Hand Rail Bits ... dis 10&10&10%
Ives' "Jennings" Bits ... dis 40&10&10%
Expansive Bits, Clark's small, $18; large, 26 .. dis 25%
Expansive Bits, Ives' ... $20@30, dis 33⅓%
Expansive Bits Blake's ... $20, dis 40%
Hollow Augers, Ives' ... dis 25%
Hollow Augers, Douglass' ... dis 25&10%
Hol. Aug., Bonney's Adjust., ₱ doz $48, dis 25&10%
Hol. Aug., Stearns' Adjust., ₱ doz $48, dis 20&10%
Hol. Aug., Ives' Expansive, each $4.50, dis 30&10%
Hol. Aug., Universal Expansive, each $4.50, dis 20%
Wood's ... dis 25%
Gimlet Bits ... $7.50 ₱ gross, dis 50%
Gimlet Bits, Diamond ... ₱ doz $1.25, dis 40%
Double Cut Gimlet Bits, Shephardson's ... dis 40%
Double Cut Gimlet Bits, Douglass' ... dis 33⅓%
Double Cut Gimlet Bits, Ives' ... dis 50%
Morse's Bit Stock Drill ... dis 25%
L'Hommedieu's Ship Augers ... dis 15%

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Sewing Brass Ferrule ... $3.50 ₱ gross—dis 40&10%
Patent Sewing, Short ... $10 ₱ gross—dis 40&10%
Patent Sewing, Long ... $1.20 ₱ doz. net
Patent Peg, Plain Top ... $10 ₱ gross—dis 40&10%
Patent Peg, Leather Top ... $12 ₱ gross—dis 40&10%

AWLS, BRAD SETS, &c.
Awls, Sewing, Common ... 75c. to $1
Awls, Shouldered Peg ... 75c to $1
Awls, Patent Peg ... 50c to $1.50
Awls, Shouldered Brad, ₱ gross $2.70—dis 25&10%
Awls, Handled Brad ... $7 ₱ gross—dis 25&10%
Brad Sets, Aiken's ... ₱ doz. $12—dis 45&10%
Brad Sets, No. 42, $10.50; No. 43, $12.50 ... dis 70%
Brad Sets, Stanley's Exc.' No. 1, $9.60. dis 30&10%
Brad Sets, Stanley's Exc.' No. 2, $4.80. dis 30&10%
Brad Sets, Stanley's Exc.' No. 3, $7.80. dis 30&10%

AXES.
Collins & Co ... $7.25; beveled .. $7.75
Cohoes Mfg. Co ... $7.25; beveled .. $7.75
Lippincott or Mann's.
Single Bit, 4½ to 5½ and under .. ₱ doz. $6.50 net
Single Bit, 4½ to 6 and over ... ₱ doz. $7.00 net
Single Bit, beveled ... 50c. doz. advance
Double Bit, 4½ to 5½ and under ... ₱ doz. $12.00 net
Double Bit, 4½ to 6 and over ... ₱ doz. $13.00 net
Double Bit, beveled ... $1.00 ₱ doz. advance
Second quality Axes ... 50 cts. less than above

AXLES.
Sheldon & Co., iron ... 55% off
" " " steel ... 55% off
AXLE GREASE—Frazer's ... ₱ lb. 6c.

BALANCES.
Spring Balances ... dis 40&10%

BELLS.
Hand, Light Brass ... dis 75&10%
Hand, White Metal ... dis 60%
Hand, Silver Chime ... dis 20&10%
Hand, Globe (Cone's Patent ... dis 25&10%
Gong, Abbe's ... dis 20&10%
Gong, Yankee ... dis 30&10%
Gong, Barton's ... dis 30&10%
Leon Reading ... dis 25&10&10%
Pull, Brook's ... dis 50&10%
Crank, Taylor's ... dis 25&10%
Lever, Sargent's ... dis 55&10%
Bloomfield ... dis 20%
Lever, R. & E. M. Co's ... dis 45&10&2%
Call ... dis 25%
Cow, Common Wrought ... dis 55&10%
Cow, Western, Sargent's List ... dis 55&10%
Cow, Kentucky, Sargent's List ... dis 55&10%
Cow, Moore's or Dodge's, Genuine Ky., new list:
Nos. 0 1 1½ 2 3 5 5 6 Hog } dis. 70
$12 $10 $9 $8 $7 $4 $3.50 $2.50 $5
Cow, Texas "Star" ... dis 40%

BELLOWS.
Blacksmith's Common ... dis 50&10%
Molder's ... dis 25%
Hand Bellows ... dis 25%

BLIND FASTENERS.
Francis ... dis 20%
Mackrell's ... ₱ doz pairs $1.00, dis 10%
Van Sand's Screw Pattern ... $9 ₱ gross, net
Van Sand's Old Pattern. 1¾, $8; 1½, 8.50 ₱ gro. net
Merriman's ... new list, net
Zimmerman's, 10¾ in ... ₱ gross $33.00
Zimmerman's, 9 in ... ₱ gross $30.00

BLIND STAPLES.
Barbed, ½ in. and larger ... ₱ lb 11c net
Barbed, ⅜ in ... ₱ lb 13c net

BLOCKS.
Bagnall & Loud ... dis 30%

BOLTS.
Cast Iron Barrel Shutter, &c ... dis 55&10%
Cast Iron Chain (Sargent's list) ... dis 60&10%
Wrought Barrel ... dis 55&10%
Wrought Square ... dis 55&10%
Wrt. Shutter, all Iron, Stanley's list ... dis 50&10%
Wrt. Shutter, Brass Knob, Stanley's list .. dis 50&10%
Wrought Shutter, Sargent's list ... dis 55&10%
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Wrought Sunk Flush, Stanley's ... dis 40&10%
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Carriage and Tire, Common, new list ... dis 80%
Carriage and Tire, Philadelphia Pattern ... dis 80%
Carriage Bolts, Clarke's ... dis 75&10%
Norway ... dis 75&10%
R. B. & W. Carriage (old list) ... dis 65%
Tire, American Screw Co's., Phila ... dis 82½%
Tire, "Bay State" ... dis 70% new list
Eagle Philadelphia Tire Bolt ... dis 82½&5%
Stove ... dis 70%
Plow ... dis 60&10%
Machine ... dis 75&10%
Bolt Ends and Lag Screws ... dis 75&10%

BORAX.
15c ₱ lb net.

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Q. S. Backus ... dis 50%
Barber's ... dis 40&5%
Spoffard's Patent ... dis 50&5%
Ive's Patent Braces ... dis 50%
Common Ball (American) ... dis 55%
Amidon's ... dis 50%

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Sweet & Clark upright, 3.60 angular ... 4.40 net
Lawrence " 3.00 " ... 3.50 net
Hubbard " 3.00 " ... 3.20 net
Phillips, with Augers ... 7.00 7.50 ... net

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Shelf, plain ... dis 50&10%
Shelf, fancy ... dis 35&10%

BRIGHT WIRE GOODS.
New list ... dis 70&10&10&10%

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Union Nut Co ... dis 55%
Sargent's ... dis 60&10%
Humason, Beckley & Co's. ... dis 60&10%

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Wrought Brass ... dis 70%
Cast Brass, Fast Joint ... dis 20&10%
Cast Brass, Loose Joint ... dis 10&10%
Fast Joint, Narrow ... dis 60&10%
Fast Joint, Broad ... dis 60&10%
Loose Joint ... dis 70&10%
Loose Joint, Japanned ... dis 70&10%
Loose Joint, Jap, with Acorns ... dis 70&10%
Parliament Butts ... dis 70&10%
Mayer's Hinges ... dis 70&10%
Loose Pin, no Acorn ... dis 70&10%
Loose Pin, Acorns ... dis 70&10%
Loose Pin, Acorns, Japanned ... dis 70&10%
Loose Pin, Acorns, Jap'd, Plated ... dis 70&10%
Tips ... dis 70&10%

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Fast Joint, Narrow ... dis 60&10&10%
Fast Joint, Lt. Narrow ... dis 60&10&10%
Fast Joint, Broad ... dis 60&10&10%
Loose Joint, Broad ... dis 60&10&10%
Table Butts, Back Flaps, &c ... dis 60&10&10%
Inside Blind, Regular ... dis 60&10&10%
Inside Blind, Light ... dis 60&10&10%
Loose Pin, Wrt ... dis 60&10&10%
Loose Pin, Light ... dis 60&10&10%
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Geer's Spring and Blank Butts ... dis 30%
Hart Manufacturing Co ... dis 60&10%
American Spring Hinge Co's ... dis 25%
Gem Spring Hinges ... dis 25%
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Blind Butts, Huffer ... dis 50&10%
Blind Butts, Clark's, Nos. 1, 3, 5 ... dis 80%
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Humason & Beckley Mfg. Co ... dis 25%
Bradley's ... dis 25%
Beatty's ... dis 25&5%

1	2	3	4	5	6	7	8
$16.50	19.00	21.50	24.00	27.00	30.00	33.50	36.50

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American ... ₱ gross $7.50, dis 10%
New Idea ... $15.00 gross
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No. 5, Iron Handle ... ₱ gross $7.50, dis 10%
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Sprague, No. 1, $2; No. 2, 2.25; No. 3, 2.50; dis 50&10%
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U. M. C., F. C. trimmed ... 50c } dis 10&10%
U. M. C., F. L. ground ... 70c }
U. M. C., Cen. fire ground ... 70c } dis 10&5%
U. M. C., Double W. Proof ... $1.40 }
G. D. & S. B ... 33c. dis 10%
E. B. 2-10, Eley's ... 60c
Musket, in 2-10's ... 55c
Hicks Ground Edge in Brass Boxes ... 55c

CARTRIDGES.
Rim ... dis 60%
Central Fire, pistol size ... dis 40%
" " Military ... dis 1.60%
B. B. Caps, Round Balls ... 1.45
" Swaged Conical ... 1.75

NEW LIST ON CARTRIDGES.
Rim-fire, 22 short ... $ 5 long ... $ 6.00
" 32 " ... 10 " ... 15.50
" 38 " ... 18 " ... 18.00
" 41 " ... 15 " ... 17.50
Central Fire—32, $11.00; 38, $13.50; 41, 15.00; 44, $19.

CARDS.
Horse and Curry, new list, July, 1881 ... dis 10%
Cotton, new list, July, 1881 ... dis 10%
Wool, new list, July, 1881 ... dis 10%

CARPET STRETCHERS.
Cast Steel, Polished ... ₱ doz $5.00, dis 30%
Cast Iron, Steel Points ... ₱ doz $2.00, dis 50%
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CASTERS.
Bed ... dis 60&10%
Plate and Shallow Socket ... dis 60&10%
Deep Socket ... dis 25&10&10%
Martin's Patent (Phœnix) ... dis 25%

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Humason, Beckley & Co's ... dis 60&10%
Sargent's ... dis 60&10%
P. S. & W ... dis 25&10%

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German Halter and coil Chain ... dis 50&10%
Trace, Breast and Fancy ... dis 60%
Oneida Halter Chain (old list) ... dis 45&5%
Galvanized Pump Chain ... ₱ lb 6c net
Jack Chain, Iron ... dis 70%
Jack Chain, Brass ... dis 60&10&10%

CHALK.
White ... ₱ gross 60c net
Red ... ₱ gross 85c net
Blue ... ₱ gross $1.00 net
White Crayons ... ₱ gross 9c net

COTTON LINES.
Cotton Fish Lines ... dis 33⅓%
Cotton Chalk Lines. 20 feet:

Nos. 11,	13,	15,	17,	20,	dis 40%
3.20.	3.60.	4.00.	4.50.	5.25.	dis 40%

CHISELS.
Socket Framing, Crossman ... dis 65&5%
Socket Framing, P. S. & W ... dis 70&10%
Socket Framing, Douglass' ... dis 75&10%
Socket Firmers, Crossman ... dis 65&5%
Socket Firmers, Ohio Tool Co ... dis 60&10%
Socket Firmers, Douglass' ... dis 75&10%
Socket Corner ... dis 70&10%
Tanged Firmers ... dis 40&45%
Tanged Firmers, Butcher's ... $5.00@$5.25 to ℒ
I. Merrill's Socket and Framing Chisel ... dis 65&10%

CLAMPS.
Iron, Screw, Eagle ... dis 50%
Iron, Adjustable, Stearns' ... dis 20&10%
Iron, Cabinet, Sargent's ... dis 65&10%
Iron, Carriage maker's, Carr & Crawley ... dis 25%

CLIPS, AXLE.
Norway or Best ... dis 60&5%
Superior ... dis 45&5%
Conestogo ... dis 60&10%
Coal Hods—Griffiths' ... dis 40%

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Racking, new list, July 10, 1880 .. dis 60&10&5%
Globe, new list, July 10, 1880 ... dis 60&10&5%
Plain Bibbs, new list, July 10, 1880 ... dis 60&10&5%
Ale and Beer, new list, July 10, 1880 ... dis 60&10&5%

COFFEE MILLS.
Parker's ... dis 45%
Wilson's ... dis 40&10%
Logan & Strobridge ... dis 45%
Enterprise Mfg. Co ... dis 25%

COMPASSES, DIVIDERS, &c.
Compasses ... dis 60&10&10%
Calipers ... dis 60&10&10%
Dividers ... dis 60&10&10%
Cook's Pencil ... dis 10%

COOPERS TOOLS.
Bradley's ... dis 15@20%
Barton's ... dis 20%

CROW BARS.
Cast Steel ... ₱ lb 4c
Iron, Steel Points ... ₱ lb 3½c

CURLING IRONS, &c.
½, ⅝, ¾ in., $1.80, 2.00, 2.50 ... dis 10%
Curling Tongs ... ₱ doz $3.65, dis 10%
Pinching Irons ... ₱ doz $7.50, dis 20%

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Fitch's new list ... dis 50%
Hotchkiss, Novelty, new list, July, 1880 ... dis 25%
Hotchkiss, Excelsior Superior Champion ... dis 25%
Lawrence, "Perfect" ... dis 25&10%
Rubber ... ₱ doz $10.00, dis 25%
Sweet & Clarke ... dis 50%
Lusters ... dis 25%

CURTAIN PINS.
Silvered Glass ... net
White Enamel ... net

CUTLERY.
Association (Table) ... net
Naugatuck Cutlery Co ... list net
Excelsior Knife Co ... net
Wilson's Butcher and Shoe Knives ... dis 30%
Ames' Shoe Knives ... dis 15%
Wm. Rogers Mfg. Co., Plated Cutlery ... Net

DOG COLLARS.
Embossed Gilt ... dis 20%
Leather ... dis 25%
Brass ... dis 25%

DOOR SPRINGS.
Torrey's Rod, regular size, ₱ doz., $3 .. dis 40&10%
Gem (Coil):
No. 1, Large Japanned ... ₱ doz $4.00 }
No. 2, Medium Japanned ... ₱ doz 2.75 } dis 40%
No. 3, Small Japanned ... ₱ doz 2.00 }
No. 4, ("Shoo Fly") Screen door size, 1.50
No. 5, Screen door size ... 2.00 }
No. 6, Medium ... 2.75 } dis 50%
No. 7, Large ... 4.00 }
Standard—10 doz $1.25; 9 doz $1.75 ... dis 60&10%
8 doz 2.50; 6 doz $3.50 ... dis 60&10%
Hercules ... dis 50&10%

DRAWING KNIVES
Ohio Tool Co ... dis 60&10%
Crossman's No. 1 ... dis 65&5%
Nobles Mfg. Co ... dis 15%
Bradley's ... dis 35%
Adjustable Handle ... dis 20%
P. S. & W ... dis 70&10%
Douglass .. ... dis 75&10%

DRILLS AND DRILL STOCKS.
Blacksmiths' ... each, $2.50, dis 10%
Blacksmiths' Self-Feeding ... each, 7.50, dis 20%
Breast, P. S. & W ... dis 20&10%
Breast, Wilson's ... dis 20%
Breast, Millers Falls ... each, $3.00, dis 25%
Breast, Bartholomew's ... each, $2.50, dis 25&10%
Wilson's Drill Stocks ... dis 10%
Automatic Boring Tools ... each, $2.25, dis 20%

EGG BEATERS.
Dover ... ₱ doz $2.50, dis 2%
Medallion ... gross, $10.00
Victoria ... gross, $10.00

EMERY AND EMERY PAPER.
Regular numbers ... ₱ lb 6c
Flour and F. F ... ₱ lb 4c
B. & A. Emery Paper ... dis 30&5%

ENAMELED AND TINNED WARE.
Kettles ... dis 60&10&10%
Sauce Pans ... dis 45%
Tinned Sauce Pans ... dis 45%
Escutcheon Pins—Brass ... dis 50%

ESCUTCHEONS.
Door Lock ... Same discounts as Door Locks
Brass Thread ... dis 25%
Wood ... dis 25%

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Fenn's ... dis 40%
Fenn's Cork Stops ... dis 33⅓%
Star ... dis 55&10%
Frary's Patent Petroleum ... dis 20&10%
West's Patent Key ... dis 45%
Anchor Lock ... dis 45%
Metallic Key, Leather Lined ... dis 60%
Cork Lined ... dis 70%
J. Sommer's Best Metallic Key ... dis 40%
J. Sommer's Cork Lined, 1st quality ... dis 50%

FILES.
E. M. Boynton's ... new list, dis 25%
Western File Co ... dis 45%
Butcher's ... $4.50 to ℒ
Moss & Gamble ... $4.50 to ℒ
H. Disston & Sons (new list) ... dis 40%
Heller Bros.' Horse Rasps ... dis 30&10&5%
Nicholson ... dis 60&10%
New American ... dis 50&10%
Union File Co ... dis 45%
Stubs, new list ... $7.50 to ℒ, 25% off

FLUTING MACHINES.
Knox, 4¾-inch Rolls ... $3.50 each }
Knox, 6-inch Rolls ... $4.00 each } ... dis 35%
Knox, 8-inch ... $6.50
Eagle, 3½-inch Roll ... $2.15, dis 35%
Eagle, 5½-inch Roll ... 2.85, dis 35%
Crown, 4½-in., $3.50; 6, $4.00; 8, $6.50 each ... dis 35%
Crown Jewell ... 6-in., $3.40 each ... dis 35%
American, 5-in. $3; 6-in., $3.40; 7-in. $4.50 each dis 35%
Domestic Fluter ... $1.50 each, net
Geneva Hand Fluter, White Metal, ₱ doz $12 dis 25%
Crown Hand Fluter, Nos. 1, $15; 2, $12.50;
3, $10.50; 4, $8.25 ₱ doz ... dis 35%
Combined Fluter and Sad Iron, ₱ doz $15.00, dis 30%

FORKS.
Lawson & Brenizer ... dis 60%
Remington ... dis 50&10%
Sheble & Fisher ... dis 50&10%

FRY PANS.
Burnished list as follows ... dis 60&10&10%

No	0	1	2	3	4	5	6	7	8
₱ doz	$3.00	3.75	4.25	4.70	5.25	6.00	7.00	8.00	9.00

GAUGES.
Marking, Stanley's ... dis 50&10&10%
Marking, Chapin's ... dis 55&10&10%
Wire ... dis 10&10%
Wire, Disston's ... dis 20%
Wire, Wheeler, Madden & Co ... dis 10%

GIMLETS.
Nail and Spike ... dis 40%
"Eureka" Gimlets ... dis 50%
"Diamond" Gimlets ... dis 50%
Double Cut, Shepardson's ... dis 50%
Double Cut, Hartwell's ... dis 50%
Double Cut, Ives' ... dis 50%
Double Cut, Douglass' ... dis 33⅓%
"Reel" ... ₱ gro. $12.00, dis 25%

GLUE POTS.
Tinned and Enameled ... dis 40%
Family, Howe's "Eureka" ... dis 25%
Family, L. F. & C.'s "Handy" ... dis 30%

GRINDSTONE FIXTURES.
Sargent's Patent ... dis 70&10%
Reading Hardware Co ... dis 25&10%

GUN WADS.
Eley's B. E. wads, 11 upwards ... $1.75
" " " 9 and 10 ... 2.00
" " " 7 " 8 ... 2.25
" P. E. " 11 upwards ... 2.90
" " " 9 and 10 ... 3.05
" " " 7 " 8 ... 4.45

HAMMERS.
Maydole's ... dis 15%
Hartford Hammer Co ... dis 25%
Magn'c Tack, Nos. 1,2,3, 1.26, 1.50 and 1.75 ... dis 25&10%
Warner & Noble's ... dis 5%
Kip's or Selsor's ... dis 30%
Yerkes & Plumb ... dis 15%

HANDLES.—Door or Thumb Latches.
Nos ... 0 1 2 3 4
Per doz ... $0.80 1.00 1.18 1.35 1.50 ... dis 55&10%
Roggin's Latches ... ₱ doz 35c.@40c. net
Bronze Iron Drop Latches ... ₱ doz $0.90@1.10
Jap'd Store Door Handles—Nuts, $1.25; Plate, —; no Plate, $1.10 ... dis 10%
Barn Door ... ₱ doz $1.60, dis 10%
Wrought Chest ... dis 65&10%
Surface Chest ... dis 55&10%
Flush Chest ... dis 55&10%
Lifting ... dis 50&10%
Saw and Plane ... dis 40&10%
Lippincott Cross-Cut Saw ... 20c. per pair
Hammer and Hatchet ... dis 20%
Brad Awl ... ₱ gross, $3.00, dis 20&10%
Chisel, all kinds ... dis 50&10%
Auger, assorted, ₱ gross ... $4.50
Auger, large, ₱ gross ... 5.00
Patent Auger, Ives' ... dis 25%
Patent Auger, Douglass' ... ₱ set $1.25 net
Patent Auger, Swan's ... ₱ set 1.00 net

HAMMOCK CHAIRS.
White Mountain, per doz ... $36.00
" " Finished in red, per doz ... $42.00

HANGERS.
Barn Door, old patterns ... dis 60&10%
Barn Door, New England ... dis 60&10%
Climax (Anti-Friction) ... dis 50%
Warner's ... dis 20%
Richard's ... dis 20%

HATCHETS.
Underhill's ... 35%
Haines' Solid Steel ... 30%
Shingling, Nos. 1 2 3 ... ₱ doz $7.25 $8.00 $8.75
Claw, Nos. 1 2 3 ... ₱ doz 7.75 8.50 9.25
Lathing, Nos. 1 2 3 ... ₱ doz 7.50 8.00 8.50
Hammond's new list ... dis 45%
Blood's ... dis 35%
Hunt's ... dis 30%
Russel's, low list ... dis 40
Cohoes Bench Broad Adzes ... 40

HAY KNIVES.
Gem ... ₱ doz $13.50
"Lightning" ... ₱ doz $20.00 net 5%
Wadsworth's ... dis 30%

HINGES
Plate Hinges { 8,10&12 in ... 5½c. ₱ lb.
"Providence" } over 12 ... 4½c. ₱ lb.
Screw Hook { 8, 10, 12 in ... 3½c. ₱ lb.
and Strap. } 14 to 36 in ... 2½c. ₱ lb
Crown spring butt hinges, for screen doors, dis 60%; for solid doors, single action, dis 45%; for solid doors, double action, dis 55%.
Crown Screen Door Latch ... ₱ gross $12, dis 55%
Crown Christmas-Tree Holders, 2-inch, ₱ doz $2; 3-inch, $12 ... dis 45%
Bickford Portable Pump ... each $6, dis 20%
American Cake Mixer, No. 6 ... each $3.50, dis 20%
American Tobacco Cutter ... ₱ doz $15, dis 30%
A. M. Co. Clothes Wringer, No. 2 rolls, 10x1¾, ₱ doz $37.50; No. 2½ rolls, 12x1¾, $48 ... dis 20%
Heavy Welded Hook { 8@12 in. $7.50 ₱ 100 lb. } dis
14 in. & up, $6 ₱ 100 lb. } 20%
Screw Hook and Eye { ⅜ & 1 in ... 9c. } dis
½ in ... 9c. } 20%
⅝ in ... 10c. }
½ in ... 12c.
Wrought Strap & T list, Dec. 20, '77 ... dis 65&10%

HOES.
Planters ... 60&10&5%
Riveted Shank ... ₱ doz $5.00, dis 60&10&5%
Socket ...
Grub ... dis 50%
Hick's Pat. Solid C. S. Planters' ... dis 60&10%
Hick's Pat. Solid C. S. Scovill Pattern ... dis 60&5%
Hubbard, Bakewell & Co ... dis 60%

HORSE NAILS.
Ausable: Nos. 5 6 7 8 9 10
Plain, ₱ lb ... 30c 27c 25c 24c 23c 22c .. dis 20&10%
Finish'd ₱ lb. 31c 28c 26c 25c 24c 23c .. dis 20&10%
Clint'n, F'n, " ... 23c 21c 20c 19c 18c .. dis 20&10%
Clint'n, Fin'd " ... 24c 22c 21c 20c 19c .. dis 20&10%
Essex, ₱ lb ... 31c 28c 26c 25c 24c 23c .. dis ... 30%
Putnam " ... 27c 24c 22c 21c 20c 19c .. dis 5&10%
Saranac " ... 26c 23c 21c 20c 19c 18c .. dis 20%
Globe, " ... 26c 23c 21c 20c 19c 18c .. dis 10&5%
N'thw'n " ... 28c 25c 23c 22c 21c 20c .. dis 10&10%
Champlain
Forged ₱ lb ... 31c 28c 26c 25c 24c 23c .. dis 30&10%
A. C., ₱ lb ... 28 25 23 22 21 21 .. dis 10,10&5%
C. B. & K. } ... 28c 25c 23c 22c 21c 21c .. dis 11&5%
Bridgewater ... 28c 25c 23c 22c 21c 20c ... dis 30%
New Haven ... 31c 28c 26c 25c 24c 23c .. dis 30&10%
Capewell ... 31c 26c 26c 25c 24c 23c .. dis 20&10%

HORSE SHOES.
Burden ... ₱ keg $3 70
R. I. Horse Shoe Co., Perkin's Improved, Light, Medium and Heavy ... ₱ keg $3.72½
Mule Shoes ... ₱ keg $4.72½
Walker's—Forged: (Light, Medium and Heavy.)
Horse ... ₱ keg $3.72½
Mule ... ₱ keg $4.72½
Bryden Forg'd Heel & Toe Horse Shoes, $4.75 ₱ kg.
" " Plain " " " $4.75 " } 35
" " ¼ Frog } " " $5 00 " } dis
" " ¼ Pressure } " " $5.50 " }
" " Heel & Toe Mule " $5.75 "
Bryden Steel Mule Shoes, $6.75 ₱ keg ... dis 5%
Diamond State Horse Shoes ... $3.70 ₱ keg
Diamond State Mule Shoes ... $4.70 ₱ keg
Ox SHOES—Mt. Carmel Ox Shoes ... 10 cts. ₱ lb.

ICE CREAM FREEZERS.
Peerless—3 quart, $4.50; 4 quart, $5.50; 6 quart, $7, 8 quart, $9; 10 quart, $12. The Grooch Patent "Giant"—14 quart, $20; 18 quart, $25; 21 quart $30; 25 quart, $35; 32 quart, $40; 42 quart, $45. Discount 50&10%.
American—2 quart, $2.75; 3 quart, $3.25; 4 quart, $3.75; 6 quart, $5 each ... dis 45%
Crown, single action, 2 quart, $3.75; 3 quart, $4.50; 4 quart, $5.50; 6 quart, $7; 8 quart, $9; 10 quart, $11; 14 quart, $14 ... dis 45%
Crown, double action, with crank, 8 quart, $10.50; 10 quart, $13; 14 quart, $16.50; 18 quart, $21; 24 quart, $25. With fly wheel, 8 quart, $13; 10 quart, $16; 14 quart, $20; 18 quart, $25; 24 quart, $30; 32 quart, $37.50 ... dis 45%
Star, double action, 2 quart, $3.75; 3 quart, $4.50; 4 quart, $5.50; 6 quart, $7; 8 quart, $9; 10 quart, $11; 14 quart, $14 ... dis 45%
Gem, double action, 2 quart, $3.75; 3 quart, $4.50; 4 quart, $5.50; 6 quart, $7; 8 quart, $9; 10 quart, $11; 14 quart, $14 ... dis 55%
Crown Ice Chipper ... ₱ doz $7.50, dis 35%

KNOBS.
Carriage, (Jap'd 80 c ₱ gross) ... dis 60&10%
Base—Common ... dis 30&10%
Hemacite Door Knobs ... new list, dis 35&5%
Door Mineral ... }
Door Por. Jap'd ... } Same discounts as Door Locks.
Door Por. Plated. }
Door Por ... }
Furniture Plain ... 75c gross inch, dis 10%
Furniture, Wood Screws ... dis 20%
Picture ... dis 50&10%
Hemacite, Picture ... dis 35%
Shutter, Porcelain ... dis 50&10%

LADLES.
Melting & Skim'ng, Monroe's Pat. ₱ doz $4 .. dis 40%
Melting, C & C ... dis 30&10%

LAWN MOWERS.
Acme Buckeye, Easy & Excelsior, new list. dis 40&10 %

LINES.
Linen Fish.....dis 25&10 %
Wire Clothes, Galvanized, 100 feet.....₱ doz $3.00

LOCKS AND LATCHES.
Cabinet, Eagle.....
Cabinet, Gaylord.....
Cabinet, Bridgeport.....
} Changes made in list price of some numbers Jan. 1, 1881, dis 25&2 %
Cabinet, P. & F. Corbin.....dis 40 %
Trunk, new list, Jan 1, 1881.....dis 15&2 %
Yale Lock Co., Flat Key.....dis 40 %
Plate.....dis 33⅓&2 %

DOOR LOCKS, ETC.
Bradford.....
Norwalk.....
Norwich.....
P. & F. Corbin.....
Russell & Erwin.....
Mallory, Wheeler & Co....
} List prices as revised Dec. 10th, 60% for cash.
Nimick & Brittan Mfg. Co.....dis 50&2 %
Padlocks—Russell & Erwin.....
Mallory, Wheeler & Co.....
Norwich Lock Manf. Co.....
Wm. Wilcox & Co.....
Nimick & Brittan Mfg. Co.....
} dis 70 % and 5% for cash.
Wm. Wilcox & Co's Plate Locks.....dis 33⅓ %
Yale Lock Manf. Co's "Standard".....dis 40 %
Romer's.....dis 25@40 %
Conestoga.....dis 80 & 10 %
Scandinavian, "Norwich".....dis 50&10 %
Nimick & Brittan's Burglar-Proof Locks....dis 50&2%

MALLETS.
Penfield Block Co., Apple, Hickory and Lignumvitæ.....dis 30 %

MEAT CUTTERS.
Dixon's (P. S. & W.) Nos. 1 2 3 4.
₱ doz $14 $17 $19 $30—dis 35 %
Perry's, Nos. 1 2 3 4 4 gr'd 5 gr'd
Each.....$3 4 5 11 13 36 dis
Woodruff's (P. S. & W.).....Nos. 100 150
₱ doz. $15 18—dis 35 %
Hales'.....Nos. 11 12 13
₱ doz. $27 35 45—dis 50&10&2 %
Kieser's No. 55.....$40 ₱ doz dis 40 %
Kieser's Gem.....$25 ₱ doz dis 40 %
Kieser's No. 82.....$40 ₱ doz dis 40 %
Kieser's Monarch.....$45 ₱ doz dis 40 %
Beef Shaver, (Enterprise Manf. Co.).....dis 25 %

MOLASSES GATES.
Stebbins Patterns.....dis 70&10 %
Stebbins Genuine.....dis 67½&10 %
Stebbins Tinned Ends.....dis 40&10 %
Chase's Hard Metal.....dis 50&10 %
Self-Measuring, (Enterprise).....dis 20 %
Lincoln's Pattern.....dis 60&10 %
Weed's.....dis 15 %
Boss Nos. 1 2 3 4
$7 $8 $9 10.....₱ doz
Boss, Japanned Finish.....dis 60&10&10 %
Boss, Bronze Finish.....dis 50&10&10 %

NUTS AND WASHERS.
Square Nuts.....8 c off list.
Hexagon Nuts.....8¼c off list.
Washers.....7½c off list.

OILERS.
Zinc and Tin.....dis 60&10 %
Brass and Copper.....dis 50 %
Malleable (Hammer's).....₱ doz $5, dis 10 %

PINKING IRONS.
Per dozen.....75 cts. net

PLAITING MACHINES.
Astor Plaiting Machine.....each $15, dis 20 %
Crown Plaiting Machines.....dis 25 %
6 in., $6; 10 in. $8 each.

PLANES AND PLANE IRONS.
Bench, First Quality.....dis 20 %
Bench, Second Quality.....dis 25 %
Molding.....dis 15 %
Bailey's (Stanley R. & L. Co.) New list, Jan. 1879.....dis 20&10 %
The Stanley (S. R. & L. Co.) new list, January 1879.....dis 20&10 %
Bailey's.....dis 20&10 %
Plane Irons, Butcher's.....$5.50 to 6
Plane Irons, Auburn Tool Co.....dis 20 %
Plane Iron, Ohio Tool Co.....dis 20 %
Plane Irons, Sandusky Tool Co.....dis 20 %

PLIERS AND NIPPERS.
Button's Patent.....dis 33⅓ %
Hall's Pat. Compound Lever Cutting Nippers, No. 2, 5 in. $13.50; No. 4, 7 in., $21 ₱ doz..dis 25 %
Gas Pliers.....dis 50 %

PLUMBS AND LEVELS.
Disston's.....dis 40 %
Stanley R. & L. Co.'s Pat. Adjustable.dis 65&10&10 %
Stanley R. & L. Co.'s Non-Adjustable.dis 65&10&10 %
Chapin's Patent Adjustable.....dis 65&10&10 %
Chapin's Non-adjustable.....dis 65&10&10 %
Standard Rule Co.'s New Adjustable.....dis 65&10 %
Standard Rule Co.'s Non-Adjustable.....dis 65&10 %
Pocket Levels.....dis 65&10 %

RAIL.
Sliding Door, Wrought Brass.....₱ lb. 43c. dis 30 %
Sliding Door, Bronzed Wrt. Iron...₱ ft. 12c. dis 35 %
Sliding Door, Iron, Painted.....₱ ft. 4c. dis 10&10 %
Barn Door....inch..... ½ ⅝ ¾
Per 100 feet..$2.60 3.60 5.60—dis 10 %

B. D. for N. E. Hangers—
Small. Med. Large.
Per 100 feet.....$2.10 2.70 .30 net.

RIVETS.
Iron and Tinned, new list, Dec. 10, 1881.....dis 50 %
In bulk, new list, Dec. 10, 1881.....dis 45 %
Copper Rivets and Burrs.....dis 60&10 %
Nos. 7 8 9 10 11 12 13 14 15
₱ lb.. 49c. 50c. 52c. 54c. 56c. 58c. 60c. 65c. 70c.
RIVET SETS.....dis 40 %

RODS.
Stair, Brass.....dis 25 %
Stair, Black Walnut.....60c. ₱ doz.—net

RULES.
Boxwood. Ivory.
Chapin's.....
Standard.....
Stanley.....
} dis 80 % } dis 50&10 %
Stevens & Co.....dis 70&10%. Ivory.....dis 50 %
Stevens & Co. Miscellaneous.....dis 50&10 %

SAD IRONS.
Self-Heating, Charcoal.....₱ doz 9.00 net
Mrs. Pott's Irons.....dis 35 %
Enterprise Star Irons, new list, July 20, '82....dis 35 %
Comb'd Fluter and Sad Iron....₱ doz $15.00, dis 15 %
Common Sad Irons.....2½c ₱ lb

SAND PAPER.
Baeder & Adamson's Flint, 00@1½..$4.50 ₱ r'm.
Baeder & Adamson's Flint, 2, 2½&3..5.00 ₱ r'm.
Baeder & Adamson's Flint, Assort'd 4.75 ₱ r'm.
Baeder & Adamson's Star..... 3.75 ₱ r'm.
Baeder & Adamson's Emery ₱ r'm $6.50@11.50
} dis 40 %
J. Bartle's Sand, Flint and Emery Paper ..dis 30&5 %

SASH LOCK.
Clancy's No. 100, per gross.....$ 8 00 dis 20%
Claycy's No. 101, per gross..... 8 00 dis 20%
Clancy's No. 105, per gross..... 10 00 dis 20%

SASH CORD.
Common.....₱ lb, 14c. net
Patent.....₱ lb, 17c@18c. net
Silver Braided Lake Hemp.....₱ lb, 50c, dis 10 %
Silver Braid, Lake White Cotton, ₱ lb, 50c. dis 10 %
Silver Braided Lake Drab Cotton, ₱ lb, 55c. dis 10 %
Silver Lake Cable Laid, Bengall Unbleached Hemp, 17 cts.....dis 10 %
Russian Hemp, 19 cts.....dis 10 %
Italian Hemp, 34 cts.....dis 10 %
Samson Braided, white cotton.....dis 30 %
" " drab cotton.....dis 30 %

SASH WEIGHTS.
Solid Eyes, in 500-lb. lots and over, ₱ lb. 1¼c. net

SAUSAGE STUFFERS OR FILLERS.
Miles.....₱ doz. $20, dis 25&5 %
Perry.....₱ doz., No. 15; No. 0, $21....dis 35 %
Enterprise Mfg. Co.....dis 30 %
Monarch.....dis 40 %

SAWS.
Boynton's Lightning Cross Cuts, new list....dis 40 %
Boynton's Circular and Mill.....dis 40 %
Boynton's Ice.....dis 25 %
Boynton's Lightning Hand, Panel and Rip...dis 25 %
Disston's Circular.....dis 40 %
Disston's Mill.....dis 40 %
Disston's Cross Cut.....dis 40 %
Disston's Hand, Panel, Rip, &c.....dis 20 %
Hubbard, Bakewell & Co. Circular Saws...dis 40&5 %
Hubbard, Bakewell & Co. Cross Cut.....30c. ft.
Hubbard, Bakewell & Co., One-Man's, X Cut dis 40&5 %
Hubbard, Bakewell & Co., Mill Saws....dis 40&5 %
Peace Circular and Mill.....dis 40 %
Peace Hand, Panel and Rip.....dis 25 %
Peace Cross Cuts.....dis 35 %
Peace Band Saws, all widths.....dis 10 %
Webster Cross Cut, with handles,....dis 25&10&10 %
Griffin's Hack Saws and Blades.....dis 30 %

SAW FRAMES.
White.....₱ doz $1.05, dis 10 %
Saw Rods.....$10 list, dis 10&10 %

SAW SETS.
Stillman's Genuine, ₱ doz $3.50 and $5.50....dis 10 %
Stillman's Imitation.....₱ doz $3.25, dis 30&10 %
Common Lever.....₱ doz $2.00, dis 30&10 %
Leach's.....No. 0, $8.00; No. 1, $15; dis 15 %
Hammer, Hotchkiss.....$5.50, dis 10 %
Aiken's Genuine.....$13.00, dis 50&10 %
Aiken's Imitation.....$7.00, dis 50 %
Disston's.....dis 20 %
Morrill's.....No. 1, $15; No. 5, $52; dis 35&10 %

SCALES.
Hatch, Counter, No. 171....₱ doz $42, dis 37½&10 %
Hatch, Tea, No. 161.....₱ doz $15.00, dis 37½&10 %
Union Platform, Keystone.....$6, dis 45 %
Chicago Scale Co.....Special dis
Fairbanks'.....dis 20 %
Forsyth Scale Go.....dis 45 %
Howe's.....dis 20&10 %
Chatillon's Grocers'.....dis 40 %
Chatillon's Eureka.....dis 25 %
Family Universal.....dis 50 %
Family Favorite.....dis 30 %
Family Turnbull's.....dis 30 %
Scale Beams, List of Jan. 12, 1882.....dis 0 %

SCRAPERS.
Adjust. Box Scraper (S. R. & L Co.) $6.50, dis 20&10 %
Box, 1 Handle.....₱ doz $4, dis 10 %
Box, 2 Handle.....₱ doz $6, dis 10 %
Foot.....dis 45&10 %
Ship, common.....₱ doz $3, net
Wilson Mfg. Co.....dis 10 %

SCREW DRIVERS.
Douglas Mfg. Co.....dis 20&10 %
Disston's.....dis 40 %
Cowles Mfg. Co.....dis 50&12&10 %
Stanley Rule & Level Co's. Var. Hdls....dis 50&10 %
Stanley Rule & Level Co.'s Black Hdls...dis 40&10 %
Ratchet.....dis 33⅓ %
Clark's Patent.....dis 25 %
Shepardson.....dis 25 %

SCREWS.

	A.S.Co's List.	R.& E. List.
Flat Head Bright, less than 1 in.	75&10&10 %	85 %
Flat Head Bright, 1 in. and larger.	75&10 %	
Round Head Bright.	75 %	83⅓ %
Flat Head Brass.	75½ %	85 %
Round Head Brass.	72½ %	83⅓ %
Flat Head Blued (add 2½ % to net).		75 %
Brass and Silver Capped.		40 %
Japanned Flat Head.		72½ %
Coach, Patent Gimlet Point.		dis 75 %
Coach, Common or Lag.		dis 60&10&10 %
Bed.		dis 10 %
Machine, Flat Head, Iron.		dis 55 %
Machine, Round Head, Iron.		dis 50 %
Bench, Iron.		dis 50&10 %
Bench, Wood, Beach.		₱ doz $3.00, dis 10 %
Bench, Wood, Hickory.		dis 20&10 %
Hand, Wood.		dis 20&10 %
Hand Rail, Sargent's.		dis 60&10 %
Hand Rail, Humason, Beckley & Co.'s.		dis 40&10 %
Hand Rail, Am. Screw Co., list Jan. 1, '81.		dis 70 %
Jack (Wilson's).		dis 25 %

SCREEN FRAMES AND FIXTURES.
Standard Window Screens No. 1, ₱ doz $4; 2, $5
" Door " No. 5, $15; dis 50&10 %
" Window Corner Irons, No. 3, doz. st's, $2
" Door " " No. 6, " " $3 dis 50&10 %
" Door Latches, ₱ dozen, $3.60.....dis 50 %
Porter's Patent Window and Door Screen Frames:

	PER DOZ. SETS. In White.	Im. Bl'k Walnut.	
No. 20.	$2.75	$3.25	dis 33⅓ %
No. 21.	2.25	4.00	
No. 22.	5.50	6.75	
No. 23.	6.00	7.50	
No. 30.	9.00	11.00	

Porter's Corners—
No. 0. Corners and Sticks complete for a three-foot window, ₱ doz sets.....$4
No. 1. Set for Window, ₱ doz sets Bronzed, $2.40; Nickel, $5.62
No. 1½. " " ₱ doz sets, Bronzed, $3.25; Nickel, $7.50
No. 4. " " ₱ doz sets, Bronzed $4.00; Nickel, $8.00
No. ½. " " or door, ₱ doz sets, Bronzed, $1.20; Nickel, $3.00
No. 4½. " " or Door, ₱ doz sets, Bronzed, $2.00; Nickel, $4.00
No. 2½. " Door, ₱ doz sets, Bronzed, $6.75; Nickel, $15.00
No. 3. " " ₱ doz sets, Bronzed, $12.00; Nickel, $24.00
} dis 33⅓ %

SHEARS AND SCISSORS.
American (Cast) Iron.....dis 70&10 %
Pruning.....see Pruning Hooks and Shears
Barnard's Lamp Trimmers.....₱ doz $4.00
Tinners'.....dis 15 %
Massachusetts.....dis 80&10 %
Seymour's.....dis 60&10 %
Jersey Shears.....dis 80 %
J. Wiss & Son, Nickle, 50&5 %; Japanned, 60&5 %

SHEAVES.
Sliding Door, M. W. & Co., List.....dis 45&2 %
Sliding Door, R. & E. list.....dis 60&10&2 %
Sliding Door, Patent Roller.....dis 60&10&2 %
Sliding Door, Pt. Roller, Hatfield's...dis 60&10&2 %
Sliding Door, Russell's Anti-Friction..dis 60&10&2 %
Also see Hangers.

SHOVELS AND SPADES.
Ames, New List, July 1, 188r.....dis 15 %
Griffiths.....dis 50&5 %
Remington's (Lowman's Patent).....dis 30 %
Rowland's.....dis 60 %
Kimballs.....dis 35 %
Lippincott, new list.....dis 20 %
Hussy, Bins & Co.....dis 15 %

SPOKE TRIMMERS.
Bonney's.....₱ doz $10, dis 40&5 %
Stearns'.....₱ doz $9, dis 20&10 %
Ives'.....No. 1, $15; No. 2, $12 ₱ doz, dis 55&10 %
Douglass'.....₱ doz $9, dis 15 %

SILVER PLATED WARE.
Wm. Rogers Manf. Co.....dis 50, 5&5 %
Holmes, Booth & Hayden.....dis 40&10&5 %
Brown Bros.....dis 40&10&5 %
Wallace's Steel Silver Plated.....dis 33⅓&10 %
Rogers Bros 1847.....dis 50 %
C. Rogers & Bro.....dis 40, 10&5 %

SILVER PLATED HOLLOW WARE.
Wm. Rogers Manf. Co.....dis 40, 15&5 %
Meriden Brittania Co.....dis 33⅓ %

SOLDERING IRONS AND COPPERS.
Covert's Soldering Irons.....dis 60&20 %
Covert's Adjustable Coppers.....dis 60&20 %

SPOONS.
Britannia.....dis 60&10 %
Tinned, Iron, Table and Tea.....dis 65 %
Tinned Iron Basting.....dis 65 %
German Silver.....dis 40 %

STONE.
Hindostan No. 1, 5c.; Axe, 8c.....net
Sand Stone.....₱ lb., 6c., dis 33⅓&10 %
Washita Stone.....No. 1, ₱ lb., 16c. net.
Washita Stone, Slips.....No. 1, ₱ lb., 45c. net.
Arkansas.....$1.50 ₱ lb., net

SQUARES.
Steel....dis 60&10 %; full cases, dis 60&10&10 %
Iron....dis 60&10 %; full cases, dis 60&10&10 %
Nickel Plated.....add $2.50&$4 ₱ doz net.
} 5% cash.
Try Square and T Bevels.....dis 50&10 %
Disston's Try Square and T Bevels.....dis 40 %

TACKS, BRADS, &C.
[Less 10&2 % for cash if paid by 6th of month following sale.]
American Iron Carpet Tacks, all kinds.....55 %
Steel Carpet Tacks, all kinds.....50 %
Swedes Iron Carpet Tacks, all kinds.....50 %
Swedes Iron Tacks.....50 %
Swedes Iron Upholsterers' Tacks.....50 %
Tinned Swedes Iron Tacks.....50 %
Tinned Swedes Iron Upholsterers' Tacks.....50 %
American Iron Cut Tacks.....50 %
Gimp and Lace Tacks.....45 %
Tinned Gimp and Lace Tacks.....45 %
Copper Tacks.....50 %
Copper Finishing and Trunk Nails.....50 %
Cigar Box Nails.....45 %
Finishing Nails.....45 %
Zinc Glaziers' Points.....45 %
Common and Patent Brads.....40 %
Hungarian Nails and Miners' Tacks.....35 %
Trunk and Clout Nails.....37½ %
Tinned Trunk and Clout Nails.....37½ %
Basket Nails.....37½ %
Chair Nails.....37½ %
Tinned Capped Trunk Nails.....30 %
Looking-glass Tacks.....25 %
Picture Frame Points.....25 %
Leathered Carpet Tacks.....25 %
Brush Tacks.....25 %

TAP BORERS.
Common and Ring.....dis 20 %
Ives' Tap Borers.....dis 15&10 %
Enterprise Mfg. Co.....dis 25 %

TOBACCO CUTTERS.
Enterprise Mfg. Co (Champion).....dis 25 %
Wood Bottom.....₱ doz $12.00, dis 40&5 %
All Iron.....₱ doz $9.50, dis 40&5 %
Wilson's.....dis 35 %

THERMOMETERS.
Tin Case.....dis 75&10 %
Storm Glasses.....$3.25 ₱ doz.

TOE CALKS.
Winsted.....₱ lb 9c. dis 5 %

TRAPS.
Game, Newhouse.....dis 35 %
Game, Oneida Pattern.....dis 60&10&5 %
Game, Blake's Patent.....dis 40&10 %
Mouse, Wood, Choker.....₱ doz holes, 16c
Mouse, Round Wire.....₱ doz $1.50, dis 10 %
Mouse Cage, Wire.....₱ doz $2.50, dis 10 %
Mouse, Catch-em-alive.....₱ doz $2.50, dis 10 %
Cyclon Mouse.....₱ doz 75 cts.
Ideal Mouse.....₱ doz $1.00
Boss.....₱ doz $9.50
Rat, "Decoy".....₱ doz $10.00, dis 10 %
Delusion Mouse, per doz.....$1.50

TROWELS.
Lothrops' Brick and Plastering.....dis 25 %
Reed's Brick and Plastering.....dis 15 %
Disston's Brick and Plastering.....dis 20 %
Clement & Maynard's.....dis 20 %
Worrall's Brick.....dis 20 %
Brades & Walby's.....dis 20 %
Garden.....dis 55 %

TRUCKS (WAREHOUSE, &C.)
Handy Truck.....$2.50 net
Penfield Block Co.'s list, 1882.....dis 35 %
Peerless, with Cogs, No. 3.....54 00
Peerless, with Cogs, No. 4.....66 00
Eureka, No. 2.....₱ doz 42 00

VISES.
Cheney's Combined Vise and Anvil.....dis 30 %
Solid Box—Wilson's.....dis 50&10 %
" Trenton.....dis 45 %
" Iron City Tool Works.....dis 50 %
Bench—Wilson's.....dis 45 %
" Trenton.....dis 25 %
" Parker's.....dis 20 %
" Prentiss.....dis 25 %
" Bonney's.....dis 35 %
Well Wheels.....dis 60&10&10 %

WIRE.
Brass and Copper, list of Jan. 17, 1884.....dis 30 %
Bright and Annealed.....Nos. 0@18, dis 50&10 %
Bright and Annealed.....Nos. 19@26, dis 60&10 %
Bright and Annealed.....Nos. 27@36, dis 70 %
Coppered.....Nos. 0@18, dis 50 %
Galvanized, Nos. 0 to 18.....Market list dis 40 %
Tinned, Nos. 0 to 18.....dis 60 %
Tinned Broom Wire, Nos. 18 to 25.....dis 60 %
Annealed Fence, Nos. 8@9.....dis 55 %
Annealed Grape, Nos. 10 to 14.....dis 50@10 %
Fence Staples, Galvanized.....₱ lb 5c
Japanned Barb Fence.....₱ lb 4c
Galvanized Barbed Fence.....₱ lb 5c
Buck Thorn Galvanized.....₱ lb 5½ c
Picture Wire.....dis 60 %
Clothes Line Wire, Galvanized.....$2.75 ₱ doz
Wire Cloth, green, drab and black....₱ sq ft 2 cnet

WRENCHES.
American Adjustable.....dis 45 %
Baxter's Adjustable "S," list Jan., 1880...dis 20&5 %
Baxter's Diagonal.....dis 20&5 %
Coes' Genuine.....dis 60 %
Coes' "Mechanics".....dis 60&10 %
Coes' Pattern, Malleable.....dis 75 %
Coes' Pattern, Wrought.....dis 60&10 %
Girard Standard.....dis 50&10 %
Girard Agl.....dis 60&10 %
Always Ready.....$9.00—25 %

WRINGERS. Per doz.
Universal, XX, No. 2½.....30.00
Universal, XX, No. 2.....39.00
Universal, XX, No. 1½.....48.00
Universal, XX, No. 1.....63.00
Universal, XX, No. 8.....each 10.75
Universal, XX, No. 12.....each 20.25
Universal, XX, No. 18.....each 22.75
Universal, XX, No. 22.....each 30.25
} dis 10 %
Peerless, no Cogs, No. 1.....42.00
Peerless, with Cogs, No. 2½.....45.00
Peerless, with Cogs, No. 2.....48.00

MISCELLANEOUS.
"Diamond" Vegetable Grater.....$5.00 ₱ doz., 10 %
Rotary Knife Potato Parer.....$18.00 ₱ doz., net
Metallic Shingles.....$5.50 and $6.50 per square.
Hopper Cherry Seeders.....$5,00 ₱ doz, net

Hartford Silver Metal

We are now able to offer our customers a

Substitute for Solid Silver and Silver-Plated Ware

that is perfectly reliable and will wear a life-time. The points of merit of this new article are: the Metal is very nearly AS WHITE AS SILVER; it is the SAME METAL ALL THROUGH; there is NO COLORING OR PLATING ABOUT IT; it costs about ONE-THIRD as much as Silver-Plated Ware; with the same care it will give as good satisfaction as Solid Silver or Plated Ware.

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Our line of SILVER-PLATED HOLLOW and FLAT WARE is as extensive as ever. We are continually adding new designs, and should be pleased to submit them to our customers.

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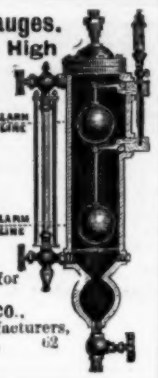
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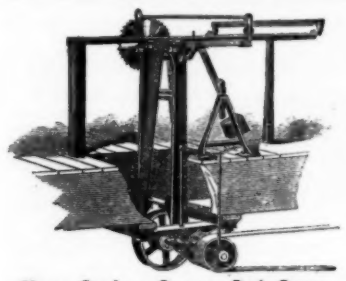
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New Swing Cross Cut Saw,

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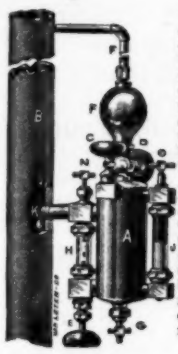
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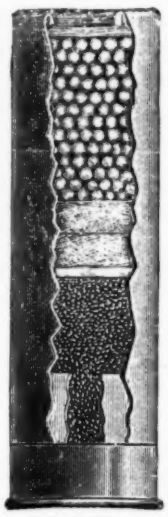
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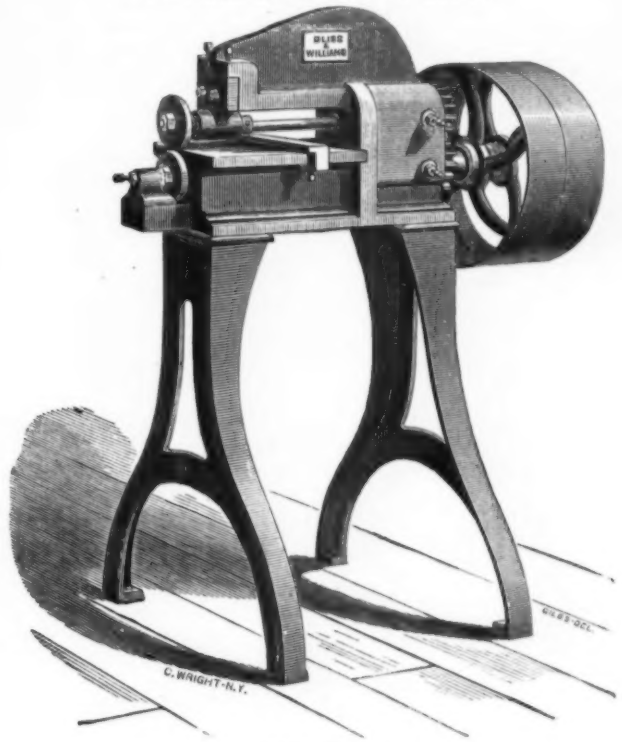
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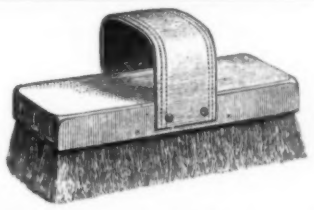
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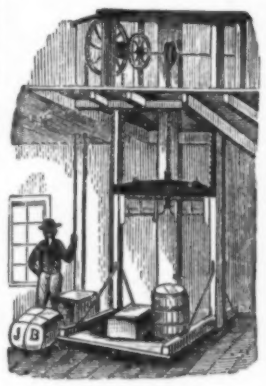
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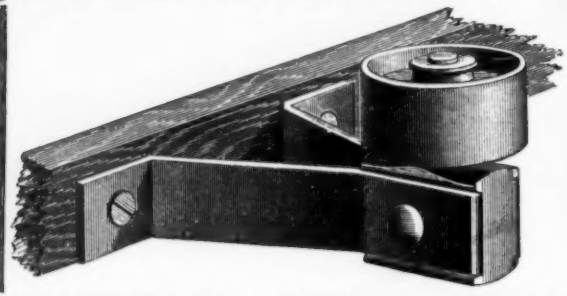
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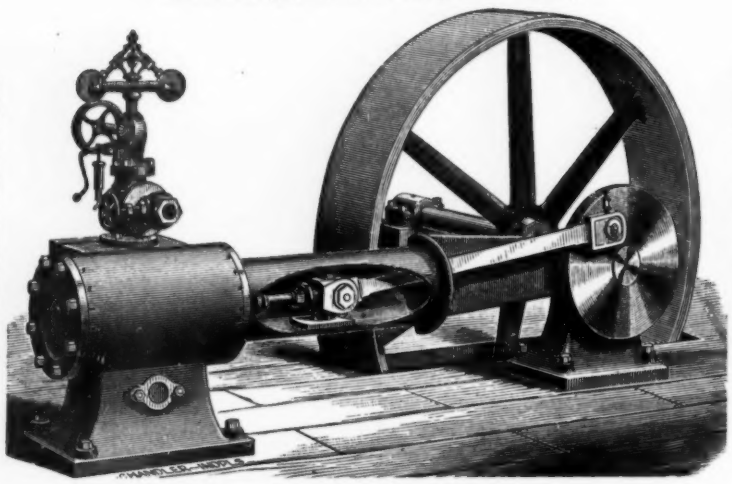
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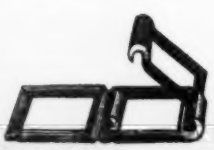


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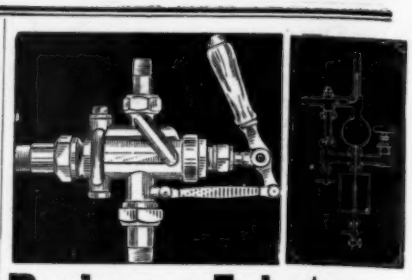


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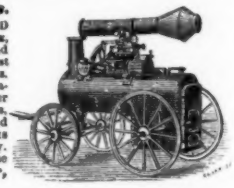


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79 DEARBORN STREET, CHICAGO. 265 and 267 BROADWAY, NEW YORK.

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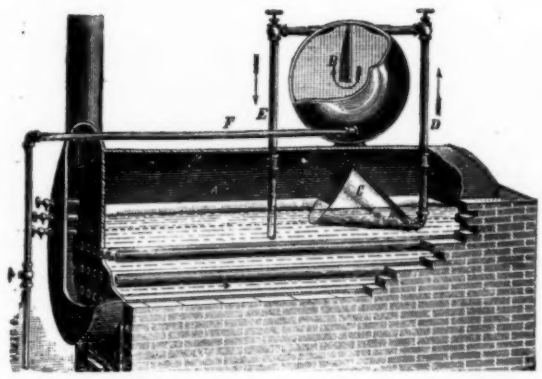
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Removes from Steam Boilers, *Lime*, *Oil*, *Magnesia*, and all other impurities of Boiler Water, and prevents *Scaling*, *Foaming* and *Burning*; but **the object of this advertisement is to inform you that some**

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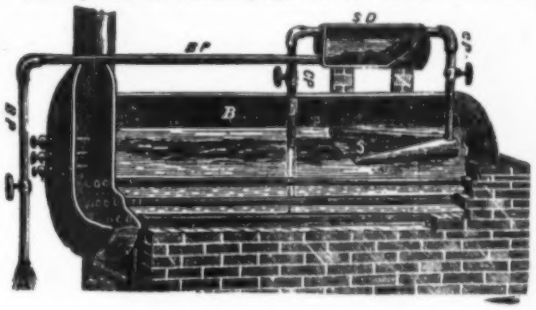


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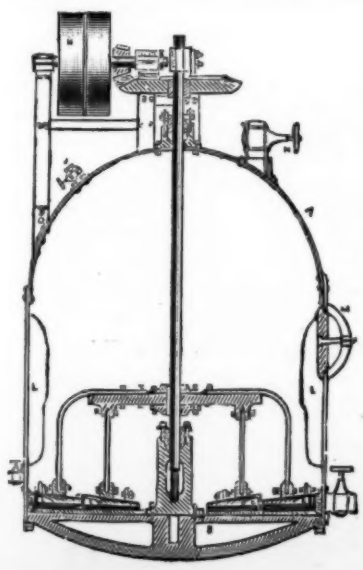
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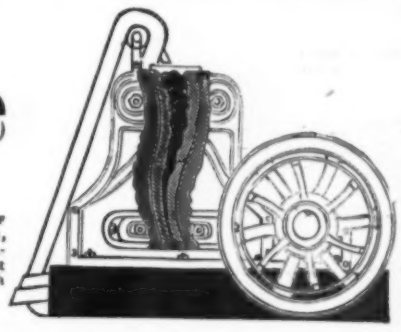
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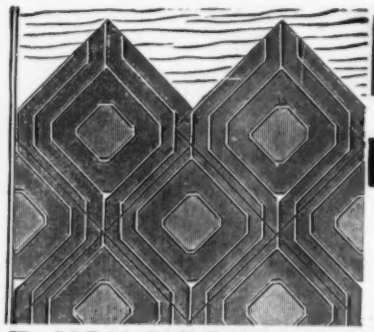
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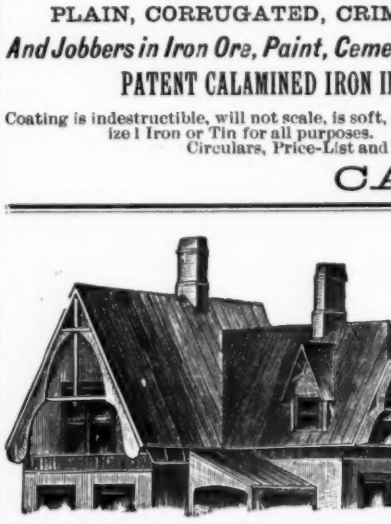
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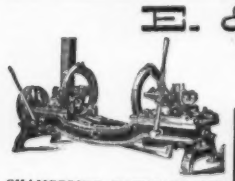


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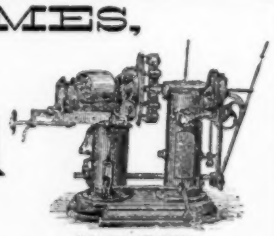
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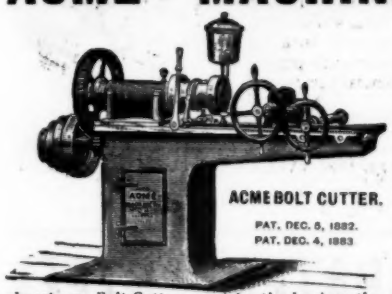
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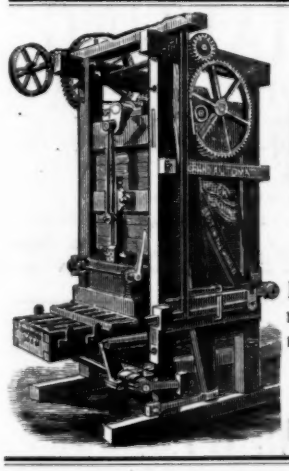
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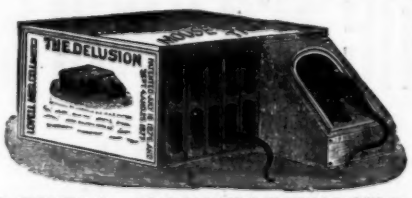
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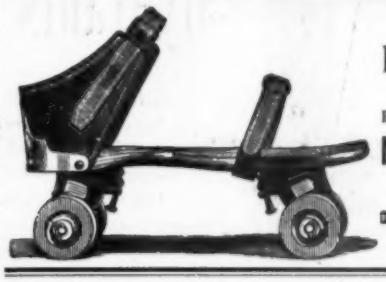
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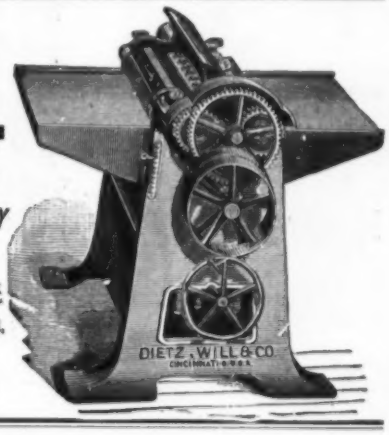
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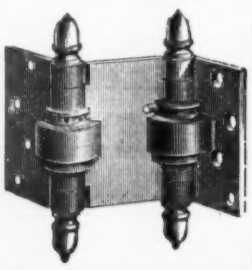
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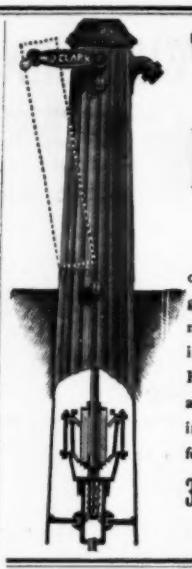
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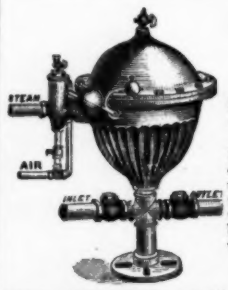
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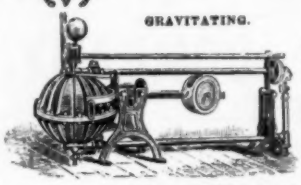
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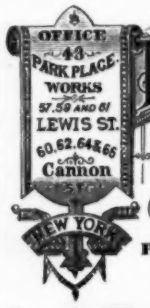


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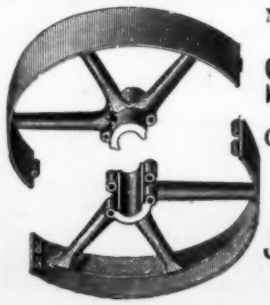
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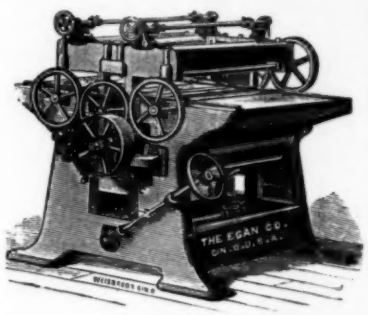
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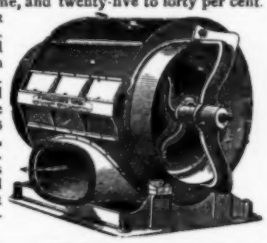
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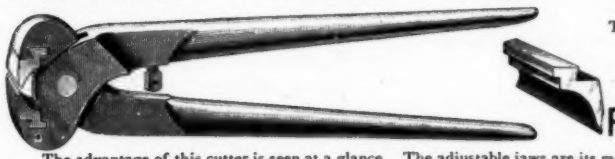


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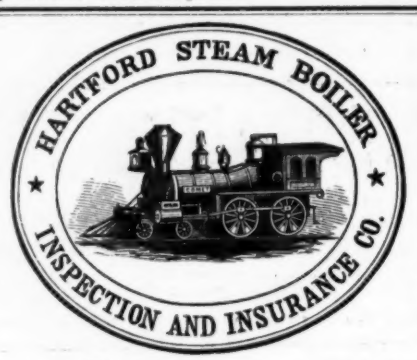
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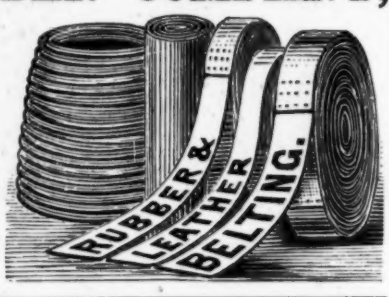
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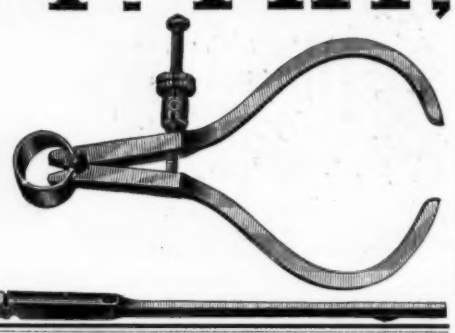


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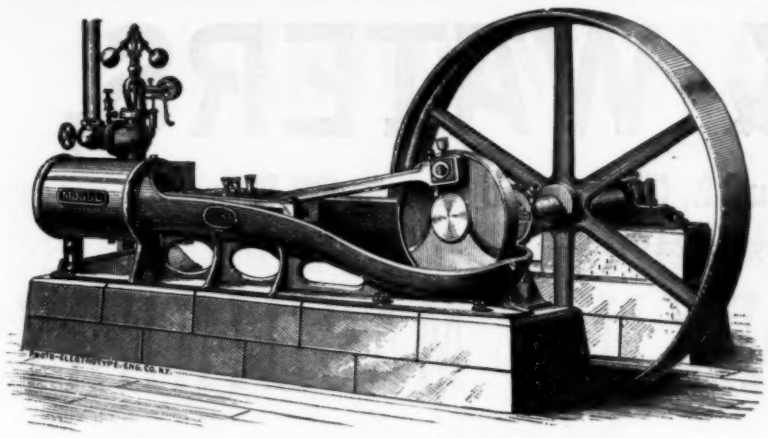
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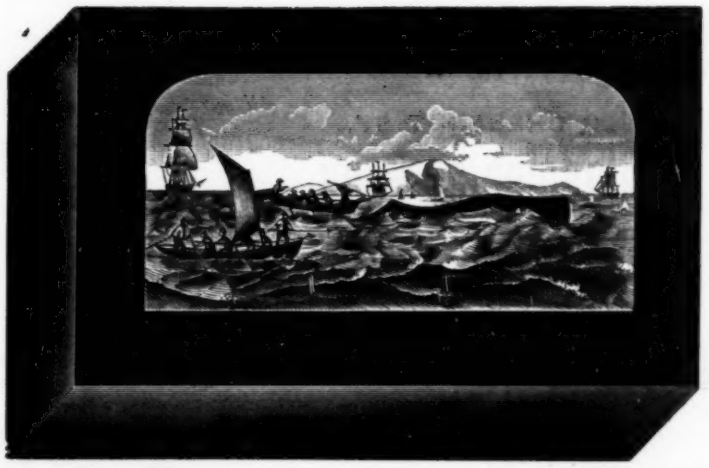
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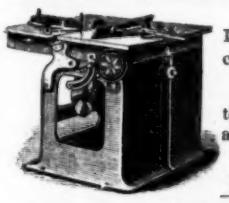
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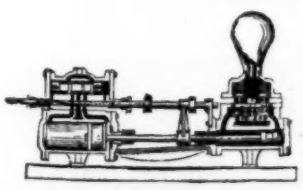
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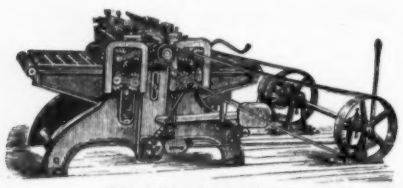
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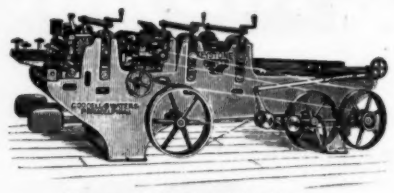
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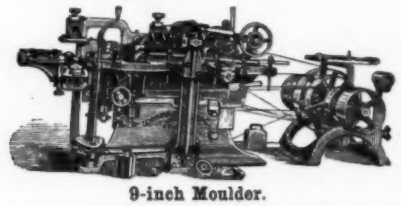
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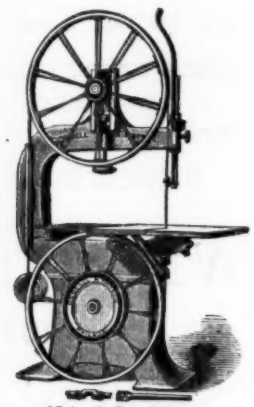
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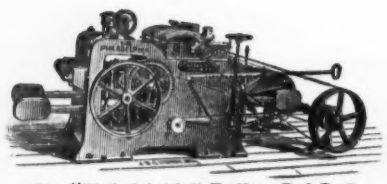
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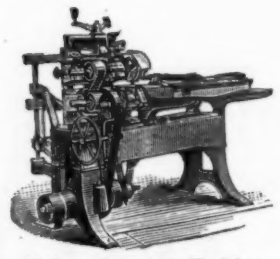
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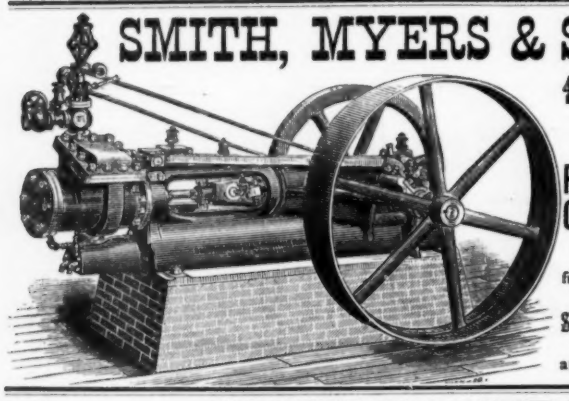
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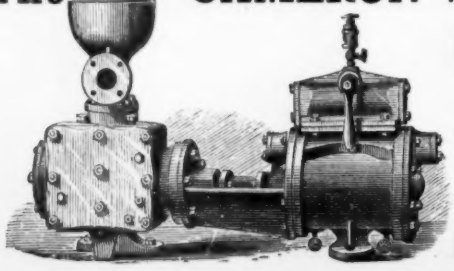
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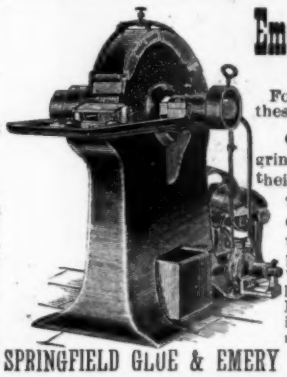
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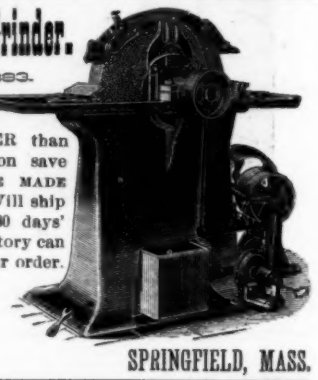


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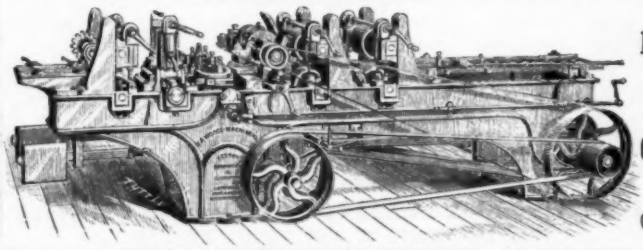


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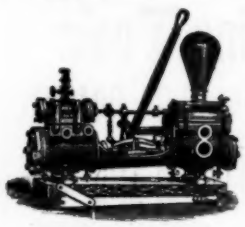
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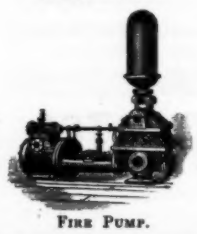
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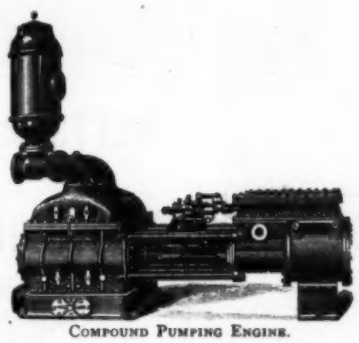


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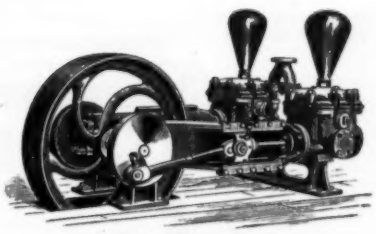


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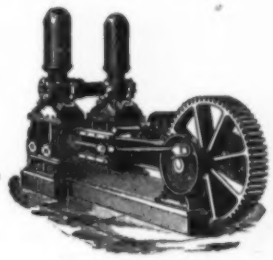
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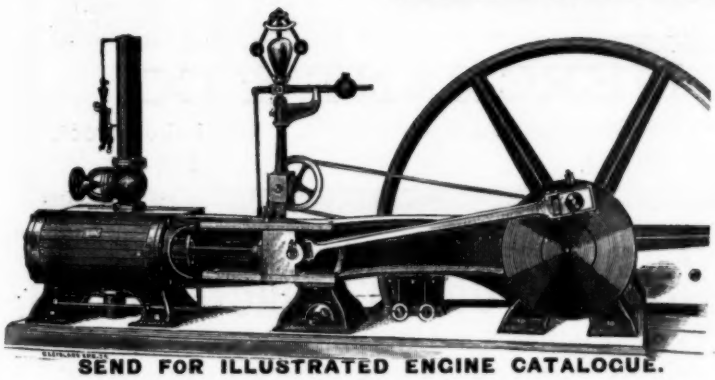
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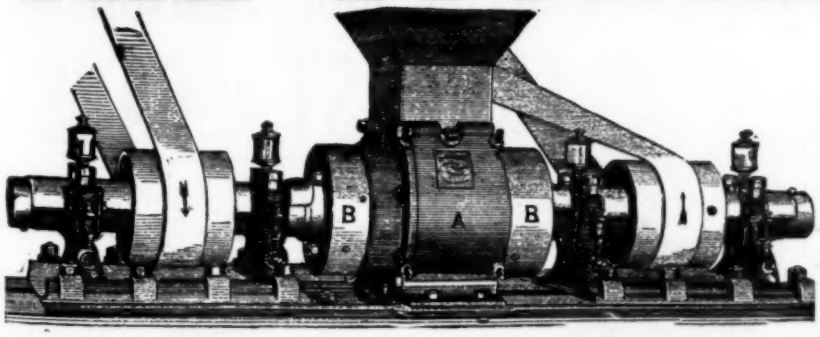
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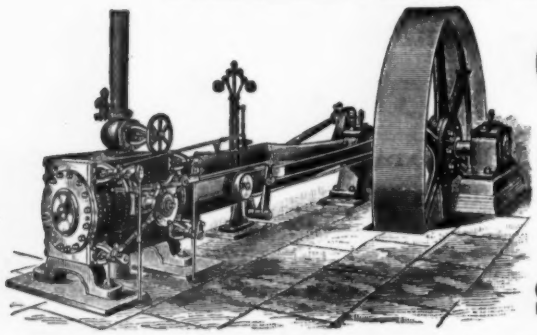
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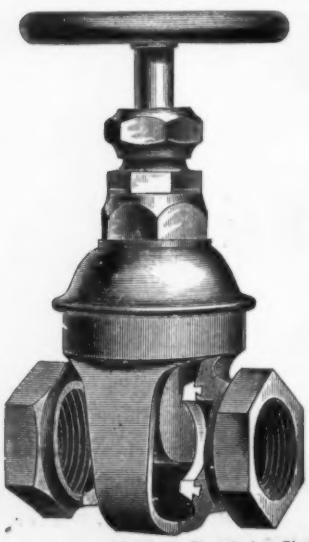
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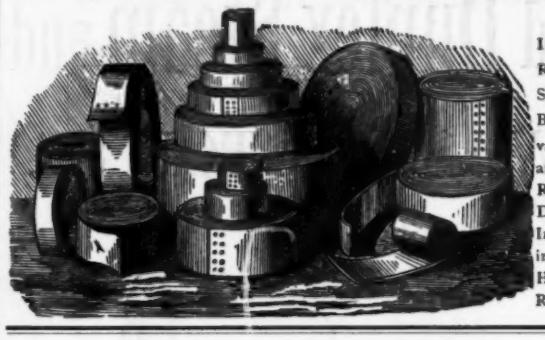
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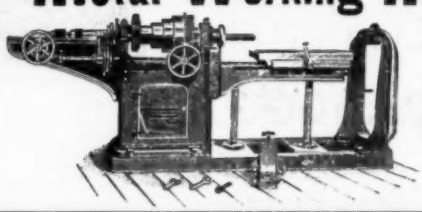
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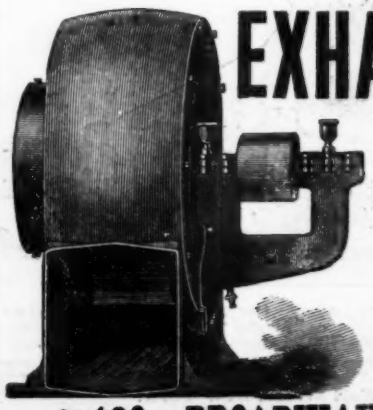
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